The Builder.

VOL. LXVII. No 2703 NOVEMBER 24, 1894.

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Mineral Statistics.

IN spite of official, semi-official, and rumoured promises of improvement; in defiance of questions asked in the House and answered with a craftiness as subtle as comforting for the time being; and in face of the utterly unreliable figures and unbusinesslike manner in which certain portions of it have hitherto been presented for public delectation, the "Mineral Statistics for 1893"* has appeared in the same form and with the same faults as its predecessors. In criticising the statistics relating to 1892 we called attention† to the absurd method of computing the quantity and value of stone turned out from quarries all over the kingdom from the number of men employed as quarrymen, or, at least, who styled themselves as such in the census returns. We find the same ridiculous error perpetuated in the returns now under review, only that instead of being based on that of 1881 they are now calculated from the 1891 census. There is this difference also, that in the present returns the number of "stone merchants" is omitted; the Home Office has evidently come to the conclusion that the 13,000 odd stone-merchants in the United Kingdom are not in future to be regarded as "stone-producers": yet many of these are also stonemasons working in the quarry.

Taking the figures as they stand, we observe that the total value of stone raised in the United Kingdom in 1893 was 7,773,743*l.*, as against 8,667,736*l.* in 1892. Slates and slabs raised were valued at 1,025,922*l.* in 1892 and at 1,107,626*l.* in 1893, thus showing a considerable improvement. Adding the values of stone and slate together, we find that they represent about one-eighth of the total mineral produce of the country; or, excluding coal, almost two-thirds of the total produce. As the compilers still include gannister, shale, sand, yellow clay, calc spar, chert, and other miscellaneous items, in the general result, it is impossible to ascertain how much stone was raised exclusively for building purposes. But by a species of analysis we are enabled to see that the quantity of Bath stone raised during the year from mines alone was 115,421 tons. Comparatively few Gloucestershire quarries are stone mines, and only 980 tons are recorded; 11,637 tons are credited to Swanage and Beer. It is impossible to arrive at the output of Yorkshire, or quarries in other counties, from any particulars given in the return. We notice that several which ought to be included under the Metalliferous Mines Act, and thus find their place amongst these statistics, are, for some inexplicable reason, omitted.

Turning to the production of slate and slate slabs, it is noteworthy that the slate mines in England and Wales only gave 145,951 tons, as against 293,042 tons from open works; but whereas the former fetched 471,154*l.*, and the latter only 636,472*l.*, it is evident that slates obtained from the mines were as a whole much more valuable than those from open works. The quantity and value of roofing slates exported during the year was 38,739,100, valued at 203,729*l.*, as against 48,702,700, valued at 264,985*l.*, in the previous year.

Gypsum occurs in the counties of Cumberland, Derby, Nottingham, Stafford, and Westmoreland (in rocks of Triassic age), and in Purbeckian beds at Battle in Sussex. The total amount raised in 1893 was 143,486 tons, valued at 59,369*l.*, as against 147,540 tons at 58,227*l.* in the previous year. Here, again, the Report is not as explicit as it might be. Gypsum is raised principally for the manufacture of plaster of Paris, but the amount used annually also in the preparation of Keene's and Parian cement and as alabaster "marble" is very large. It might not be easy to separate the quantities used for plaster and cement respectively, but surely it is not too much to ask that that used as marble shall be dealt with in a different form. As the return at present stands, it is impossible to ascertain what particular product is responsible for the reduction in quantity in last year's output. It is noteworthy that the gypsum raised in Cumberland and Westmoreland is not valued at such a high price as in the other counties mentioned.

The official method of dealing with clays is to separate those used in the manufacture of certain pottery and all china-ware, and fire-clay and fullers' earth, from those dug for brick-making and the like. The figures relating to the last-mentioned portions, as already stated, are submerged in the muddle headed "Stone, &c." Glancing at the statistics relating to the remainder, we note that the compilers could easily have furnished separate items for china-clay, pottery-clay, fire-clay, and fullers' earth respectively, but that they have elected to mix all these products together in the general totals in such a way as to entail considerable trouble in understanding them. These totals show that during 1893 3,065,208 tons, valued at 817,419*l.*, were raised, as against 3,103,852 tons, at 889,375*l.*, in the previous year. Of this we estimate that about 2,370,000 tons, valued at 430,000*l.*, relate to fire-clays in 1893, thus showing the greater comparative value of the clays used for other purposes mentioned. The term "pottery" is a difficult one to comprehend in the light of the present method of putting the figures. If one restricts it to the ware made from the white and greyish clay as raised in Devon or Dorset, as is done apparently in the returns before us, a totally erroneous idea is imparted. We prefer, therefore, to leave that item to take care of itself. No attempt is made to separate china-clay from china-stone, to which we have no special objection; but the total production of these two commodities is rendered unintelligible by the inclusion of "&c."—whatever that might refer to in this case. What has become of the "china-stone" raised in such large quantities near Holyhead, in Anglesey? Surely the industry has not died out; we saw it in full working-order only a few years since. Are we to understand, also, that none of these clay products are obtained from open works in Ireland?

The quantity of "ochre, umber, &c." raised in 1893, was 10,534 tons, valued at 13,880*l.*; in the previous year 12,131 tons at 16,782*l.* were returned. The greater part of this was obtained from open works in the counties of Devon, Gloucester, and Somerset, but nearly one-fourth of the total production was raised from mines in Anglesey and Somersetshire. The return states that a considerable amount of ochre is deposited by the ferruginous water from copper precipitation pits, when exposed to the action of the atmosphere in shallow ponds.

The statistics relating to arsenic refer to

* "Mineral Statistics of the United Kingdom, &c., for the Year 1893." Prepared by Her Majesty's Inspectors of Mines. London. 1894.

† *The Builder*, December 9, 1893, p. 426.

arsenious acid, or white oxide of arsenic (crude and refined); much of it is a by-product obtained in preparing the tin and copper ores of Cornwall and Devon. 5,976 tons, valued at 57,694*l.*, were returned for 1893. Arsenical pyrite is sold to works principally in the two counties last mentioned, for the manufacture of white arsenic. The quantity obtained in 1893 was 3,036 tons, valued at 2,948*l.*

Fluor spar is found in the counties of Cornwall, Derby, and Durham. It is used as a species of polished "marble," especially in Derbyshire, but is also employed as a flux in various metallurgical operations, and in the manufacture of hydrofluoric acid. In 1893, 215 tons, valued at 161*l.*, were returned. Here, again, the compilers might have indicated the proportion made into "Blue John" goods.

The various other minerals raised are not of special interest to us, and need not, therefore, be noted.

The production of minerals and certain metals in the British colonies and possessions is referred to in an appendix. We observe from this that in 1892 no fewer than 280,053 tons of stone, dressed and in the rough, valued at 164,835*l.*, are credited to Guernsey and Jersey, though how much appertains to each island does not appear. The figures mostly refer, of course, to road-metal and the like from St. Sampson's. There seems to have been some slight increase in the trade, for in 1891 the stone exported only amounted to 131,088*l.* The circumstance that a work published well into 1894, and referring to 1893, should not be able to give any later statistics in regard to the Channel Islands' trade than those relating to 1892 (which statistics, we note, are taken from the "Annual Statistics of Trade of the United Kingdom for 1892"), is a striking commentary on the influence of "red-tape." The authorities in Guernsey, as we know from experience, would be glad to supply the information up-to-date gratuitously, on the expenditure of a penny postage-stamp and the trouble of writing a letter.

They seem to take considerable care in Ceylon in compiling mineral statistics relating to the island. For instance, the blocks of "Cabook" building-stone have actually been counted; they number 3,372,500, and were valued at 9,358*l.*, in 1892. The number of "cubes" of granite raised in the same year came to 7,033, and were valued at 3,165*l.* We wonder that the excellent manner of setting forth the products of Queensland should be retained in the Home Office publication before us. We read that during 1892 60 ozs. of marble, 1,600 ozs. of sandstone, and so many ozs. of bluestone, freestone, limestone, and porphyry were raised; when we see that marble in Queensland, according to this official return, is valued at 2*l.* per oz., and that freestone fetches more than 3s. per oz., we begin to get some idea of the cost of building in the colony.(!) The Home Office is evidently jealous of the superiority of the methods adopted by the compilers of the mineral statistics of Canada. That colony, like the United States, publishes figures which may be comprehended at a glance; thus the quantity and value of bricks, cement, grindstones, tiles, &c., are given in the Canadian annual returns. This proved too much for the authorities at Whitehall, who note that "In order to make the Canadian statistics agree with the system adopted in other Colonies these products are omitted"—*i.e.*, in the publication before us. If they are to be excluded because they are manufactured products, let that system pervade the whole of the returns. Slate slabs, for instance, are as much manufactured articles as are bricks, tiles, and many other things we could point out in the return under review. Adopting the method pursued with reference to Canada, these manufactured products ought not to appear in the mineral statistics of the United Kingdom. We note that *purified* asphalt from Trinidad to the extent of 9,409 tons, valued at 18,818*l.* in 1892, is included; the raw asphalt, 102,816 tons, was valued at 102,813*l.* in the same year.

We have no desire, however, to continue the criticism; more than enough has already been said to show that before our annual "Mineral Statistics" can be of any real use, they will have to be presented in a totally different manner, in much more minute detail, and more carefully edited. We know perfectly well that certain particulars are not permitted to be given by Act of Parliament; we know also that in some cases it is not compulsory on producers to furnish the authorities with figures as to quantity and value of minerals raised. But, leaving these difficulties out of the question, and speaking only with reference to what statistics are available and may be published, we have no hesitation in saying that they are, for the most part, given in the worst form it is possible to devise, and in certain cases, apparently, with the deliberate desire to confuse the reader. Finally, let us remind the Home Office that "coal" and "iron" are no more deserving of selection for special attention than the other minerals mentioned in the Report; a work professing to give an account of the value and quantity of all minerals raised in this, or any other country, should deal with each mineral impartially.

HISTORY OF PAINTED GLASS.

MR. WESTLAKE has at last concluded, by the issue of the fourth volume, the excellent history* of the art of stained glass to which he has long devoted himself. We use the expression "stained glass," which has come by association and long use to have a kind of special and picturesque signification, and which, moreover, appears to us the more correct one; and we do not see why Mr. Westlake prefers the expression "painted glass," which has not been consecrated by usage, and which is so far from being true in fact that, although there is painting on glass, in the detail of even the best periods of work, it is nevertheless true that in a general way the less painting there is the better is the work, and that which is entirely and literally painted glass is exactly what those who best understand the art wish to see the least of. Why then adopt the term "painted glass?"

Mr. Westlake's book is, however, as he carefully discriminates on the title-page, not a history of painted glass, but "of design in painted glass"; it is the artist rather than the material that we are concerned with, though we have to consider the design as influenced by or suited to the materials.

Mr. Westlake's new volume brings us to the Renaissance period, and the transition from Mediæval to Renaissance design, which did not happen all at once, nor entirely *pari passu* with the change in architectural style. This was natural enough in the case of an artistic medium which is so stubborn as stained glass, so much hampered by technical conditions. A new habit of treatment could not be evolved at once for such a material. The most marked characteristic, Mr. Westlake observes, of early sixteenth-century design, in certain instances, was the abandonment of canopies, which the author suggests may have been due to an invasion of realistic feeling—"Abel was not killed in a centre of canopy work," &c. It is hardly necessary, however, to imagine so philosophical a motive. The constant tendency to change, to try new experiments in style, in the Mediæval period, is quite sufficient to account for the abandonment of a form of detail which had been worked for some time, and presented no further capability of development. As the author truly observes, however, a decorative framework between the figure and the margin of the window is a desirable element in stained glass design, and where nothing was substituted for the canopy the result was a loss. Another characteristic of the period which is noted is the comparative abandonment of outline as a means of delineating the figure, at least as the main means, and the use of more elaborate modelling and shadowing; in so doing running the risk of destroying one of the greatest beauties of the material—its translucence—and substituting, in many portions of the work at all events, an opaque surface-colour, which would decay and peel off in time, for a translucent tint embodied in the glass. On the other hand, one is rather surprised to find the author, a page or two further on, getting enthusiastic over the beautiful effects to be got with enamel colours, and wishing, now that domestic glass is coming in, that some specialist would take up and revive this class of work. We cannot much sympathise with this wish. The true art of stained glass lies in translucent coloured glass, not in painting in semi-transparent colours on white glass; and one may just as well have the true art in the house as in the church.

Among the most interesting of the designs of which illustrations are given in the book are those from the Chapel of the Holy Ghost at Basingstoke. These designs have been ascribed both to Flemish and to French artists; Mr. Westlake is of opinion that they are probably by English artists. Both Lord Sandys and Bishop Fox, he states, were interested in the Basingstoke chapel. "Bishop Fox had entrusted such important works as those at King's College, Cambridge, to the King's glasyers, Flower & Hone, of Southwark (the latter of whom did the Hampton Court work); it seems to me, therefore, hardly probable that he would have gone abroad for that in the chapel at Basingstoke." Fig. 1 shows a canopy from the chapel, which is an interesting example of Gothic feeling in work of this kind, carried out with Classic details. The three-centred arch in the lower part of the composition, though not pointed, seems like a survival of the Tudor form of arch; and the pinnacles above have a decided Gothic appearance, though the detail is mainly Classical—not entirely so, for it will be observed that the pointed ogee arch occurs on the front of the pinnacles. The figure of St. Peter (fig. 2) from a window in the same chapel, with its fine and expressive head, is much less Mediæval in appearance; but if there were any foreign influence in it, it suggests Italy rather than France or Belgium. As in fig. 1, the lead lines are very boldly and freely treated, and not on any fixed system as to following the lines of the design, though they are more consistently treated in this respect than in fig. 1, where, as will be observed, some of the leads follow the lines of the design (rather roughly), while the lower horizontal bar entirely ignores the design, and cuts straight through the arch. Fig. 3 is a piece of ornament from the same chapel at Basingstoke; and here, in spite of the symmetrical character of the design, a great deal of the Mediæval element is perceptible; indeed it would be almost difficult to decide, from the style of the design, whether this had come out of a Renaissance or a Late Mediæval window.

As to the interesting question—Who were the real designers of these and other windows of the period?—Mr. Westlake has something to say, but only in a doubtful and suggestive manner. Certain artists are mentioned in deeds relating to various windows, and it is presumed that they at least executed the cartoons, but which design each was to do the author admits is a somewhat fruitless inquiry, without more evidence on the subject than we can ever get now. He adds, "that the contractors for the windows had not great scruples, nor a great sense of artistic proprieties, is shown by the circumstance that the character of the Messengers and their canopies is often discordant*, both with each other and with the accompanying sub-

* "A History of Design in Painted Glass. By N. H. J. Westlake, F.S.A. Vol. IV. James Parker & Co., London and Oxford. 1894.

* This is in reference to the King's College windows especially.

Fig. 1.—A Canopy from the Holy Ghost Chapel, Basingstoke.

Fig. 2.—St. Peter, from the Agony in the Garden, in the Holy Ghost Chapel, Basingstoke.

jects and ornament surrounding it, and are frequently repeated; for example, those in the centre light of the seventh window on the north side are discordant with the subjects flanking them, which contain figures and ornaments with earlier *motivi*." In short, it seems not unlikely that the carrying out of stained-glass windows was at the period in question as much a business affair as in too many cases it is now; a subject on which we may have more to say in a future number. Elsewhere Mr. Westlake observes, "my own ideas are decidedly that the glasyer was the composer, and even the inventor, of some of the best ancient examples; generally speaking, he had to supply the 'vidimus' or cartoon, but in the decline of Art he may have been merely a copyist and ultimately a contractor." The same subject is touched upon in the course of the chapter on the late stained-glass of France, in reference to certain windows by Laurence Fauconnier in the Church of St. Bonnet at Bourges, who is also supposed to have done the windows at the Château d'Ecouen of the same date, 1544; a date which is inscribed, with the artist's initials, on a shield in one of the windows at Bourges, of which an illustration is given. But Mr. Westlake points out, what is indeed obvious from the two illustrations given, that there is no similarity of style between the two, as far as design is concerned, and that if, as seems probable, Fauconnier executed them both, he was the executant only, not the designer. Yet no name save his is recorded in connexion with them. The conclusion is that things were possibly not so very different then from what they are in the present day.

The chapter on French work contains a great number of interesting examples, from which we give one, from the original engraving, that of a window in St. Eustache (fig. 4).* This is a curious example of that conflict between Renaissance and the remains of Mediæval architecture of which St. Eustache is itself a type; for it will be observed that while the tracery in front of the window design is a reminiscence of Flamboyant form, the design of the window is frankly and entirely Renaissance. In its perspective treatment of the architecture it is entirely in controversion of the proper spirit of stained-glass design; yet it is unquestionably an interesting work, and there is a certain dignity and spaciousness of effect imparted to it by the comparatively small scale of the figures, which seem subordinate to the architectural background, instead of forming, as is usual in Mediæval windows, the principal and central objects to which the architectural accessories form only the framework. As to these windows Mr. Westlake remarks "though the work is late, and the designing of the figures less meritorious than in some works of earlier date, I know of none more carefully considered in regard to the building in which it was to be placed"; and in this we cannot but concur.

One of the most interesting portions of the book is that devoted to Flanders and Holland and Germany. It is true that if the colouring of the designs were given one might look at it from another point of view, but in force and originality of mere design there is much that is very remarkable in the late stained-glass art of the Low Countries and Germany. The "St. George," from Antwerp Cathedral (fig. 5), is a notable example of what may be termed entirely Gothic feeling in a window which is nevertheless Renaissance in date; it is Gothic, that is to say, in its downrightness and earnestness of expression, and the absence of anything like studied effect of attitude, and also in its rather *naïve* drawing. The severe precision with which the lead-lines follow and outline all the figure is also noticeable, and is to our thinking a fine point in the design, for we have not much sympathy with the theory of affecting to disregard the lead-lines and take them only as necessary technical incidents not affecting the picture. The leading is far too prominent an incident in a stained-glass window to be got rid of in that way; where it crosses and interferes with the main lines of the design it is impossible to forget it; and by far the most artistic treatment is to make it encase and outline the design after the manner of cloisonné. This is one of the figures from the window set up in honour of Henry VII. of England, of which Mr. Westlake gives also a complete illustration. It is a four-light window, the lower compartments of which show two three-centred arches (like that in fig. 1) crossing the mullion and extending over two compartments. The effect of this is not very good, more especially as the single figures in the lower portion of each compartment are separate and unconnected designs, and there is therefore no æsthetic propriety in connecting them in coupled groups by the architectural background, while the mullion cutting through the centre of the arch has a very harsh effect. It would have been better if the same harmony between the technical construction and the design which is shown in the St. George figure with its leading, had been also carried out in regard to the architectural lines of the whole window, which nevertheless is a fine work in the main.

German glass, Mr. Westlake observes, is characteristically German; even when the designs came from foreign sources they were immediately stamped with the peculiar German idiosyncrasy. And one of the German practices, and a very questionable one, was that of carrying the subject all over the window independently of the mullions. Several curious examples of this are given among the illustrations. As to the other qualities which belong peculiarly to German work in regard to style and manner of design, there could not well be a more thoroughly characteristic specimen than is furnished by the illustration of the window now in Trinity College Chapel, Oxford, of which we give a reduced copy (fig. 6), and which, in spite of its present ecclesiastical position, is really a piece of German or Swiss chamber-glass, and is included by Mr. Westlake under the heading of "secular painted glass." There is an utter want of refinement and grace in this; and yet this

* Of the illustrations accompanying this article, figs. 4 and 5 are from the blocks used in the book, and lent by the publisher; the remainder are reduced fac-similes of engravings in the book.

Fig. 4.—One of the Clearstory Windows, St. Eustache, Paris.

Fig. 5.—St. George; from a Henry VII. Window in Antwerp Cathedral.

Fig. 3.—From the Holy Ghost Chapel, Basingstoke.

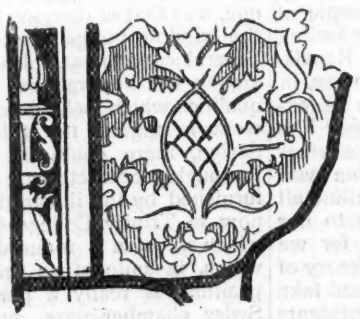


Fig. 9.

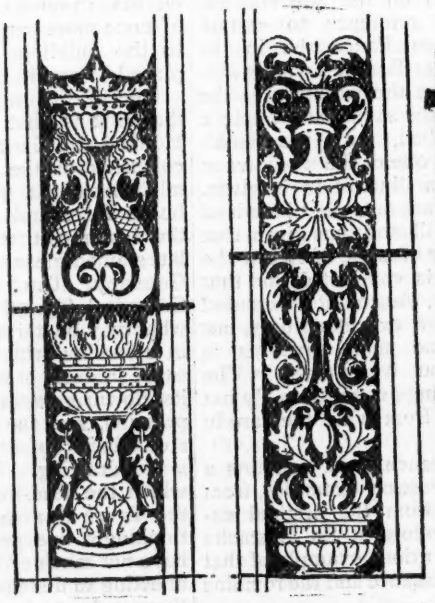


Fig. 7.

Fig. 8.

Fig. 6.—German or Swiss Chamber Glass, now in Trinity College Chapel, Oxford.

big burly figure, with its sumptuously-feathered cap, has a kind of lusty bravura about it the force of which is undeniable; and the bold free ornamental work forming the background is remarkably effective.

We add some bits of border pattern reduced from the smaller illustrations. Fig. 7 represents two borders from St. Peter's, Cologne; figs. 8 and 9 are from Grande Andelays, France, very different, however, in character (their dates are not given), fig. 8 being distinctly Renaissance, while fig. 9, though with a Renaissance border, is decidedly Gothic in the character of the inner surface ornament.

The book of which this volume is the conclusion forms a most valuable repertory of information on the beautiful and interesting subject of which it treats, not only in the shape of historical data, but from the immense number of illustrations of design of all styles and dates, and representing every locality where stained glass of importance is to be found. The leading element of colour is of course wanting, but the effect of that, as all stained-glass artists have long recognised, it is hopeless to attempt to give in chromo-lithography; besides which, the employment of so expensive a process would necessarily have very much curtailed the illustrations. It was better, therefore to keep to the illustration of design only, and leave the colour to the reader's imagination. We congratulate Mr. Westlake on the completion of the work, which will long remain a standard one of its class, and indeed for thoroughness and variety of illustration is, as far as we are aware, quite unapproached among English publications on the subject.

NOTES.

AT the meeting, last August, of the British Association (at Oxford), Mr. Arthur Evans gave some account of his discoveries in Crete, and at the meeting of the Hellenic Society on Monday Mr. Evans read a further paper on the subject, fully illustrated by diagrams. Both he and his audience suffered from the inevitable fact that his deductions were based on a mass of minute detail, difficult to set forth in any sort of popularly-intelligible form, even to a comparatively expert audience. We shall reserve all detailed criticism till the facts are published, and content ourselves with the broad statement of a theory which, if it prove sound, will revolutionise not only the whole history of the primitive civilisation of the Ægean, and with it that of "Mycenæ" art, but also incidentally may solve the problem of the early relation of Egypt and Greece, and the apparently remoter question of the origin of the Hebrew alphabet. Crete is the central point of Mr. Evans's investigations, and oddly enough he was there substantially helped by a modern superstition. The women of Crete collect and wear as charms (milkstones), ancient gems on which are found certain picto-graphic symbols. Even when he could not prevail on the owners to sell these, he was able to take impressions, reproductions of which he laid before the Society. These picto-graphic symbols not only recur, but recur together in the same collocations—*e.g.*, a gate together with a bent leg, two horns together with a star. Sometimes they are manifest reproductions of an earlier gesture language—*e.g.*, in the case of raised hands, so that we are brought to the very *origines* of written speech. These picto-graphic symbols occur not only on Cretan but on Egyptian and Hittite monuments, and it is, of course, from the Egyptian instances that chronological data arise. Out of this picto-graphic system arose, as the diagram clearly showed, a linear system such as Mr. Petrie has discovered on Ægean pottery, and which survived down to late times in the Cypriote writing. Incidentally, Mr. Evans made the interesting remark that the picto-graphic system survived to late times in the well-known magistrate's marks on coins—*e.g.*, a magistrate whose name is *Leon*, signs with an actual lion's head. Nowhere is, according to Mr. Evans, the development from picto-graphic to linear more clearly seen than in the Hebrew alphabet, where the picto-graphic bull's head yields the letter Aleph itself, the Hebrew for bull. The picto-graphic *eye* gives the "circle" or "double circle" *Ain*—itself the Hebrew for eye, and so on in many examples. These picto-graphic and linear symbols, closely related, occur in monuments hitherto known as Mycenæan, and which we may henceforth have to call Cretan. And here comes in the last step of Mr. Evans' argument, Who are the primitive dwellers in Crete, the Eteokretes? Who were these intermediaries between Egypt and Semitic lands to whom Mycenæ owed her splendour, and to whom the whole Mediterranean basin owed the beginning of its culture? None other, according to Mr. Evans, than the Philistines, our household word for the uncultured. The first smile is irrepressible, but as soon as the full facts are before us in the *Hellenic Journal*, we hope to return to this curious paradox.

AT the last meeting of the Berlin Archæological Society Professor Curtius read a paper containing a new explanation of that old standing *crux*, the central slab of the east frieze of the Parthenon. Archæologists are divided on this subject into two camps. The conservatives, and among them the British Museum authorities, still hold to the old view—recently revived with fresh arguments by Dr. Furtwängler—that the scene represented is the offering of the peplos. The younger school, headed by Dr. Waldstein, noted, and rightly, that the supposed peplos group balanced in structure, and, therefore, necessarily in subject, the group of maidens presenting the diphroi or seats, a ceremony preparatory to the Theoxenia, the banquet of the assembled gods. Their premiss was just; but the conclusion drawn from it, that the scene represented a priest deposing his outer garment preliminary to sacrifice, was inadequate and very doubtful. Professor Curtius makes a suggestion, that binds the slabs into one significant whole relative to the Theoxenia. He holds that the priest receives the huge folded carpet, "strewn" for the banquet. A boy might well bring this, whereas he would scarcely bring the peplos woven by the maidens for the Maiden. The στρῶσις, the strewing of the carpet, was as much a part of the ceremony as the setting of the seats. It will be interesting to see how this suggestion is received.

WE have referred to the unfortunate controversy at Berlin as to Herr Wallot holding one of this year's "large" gold medals for his design for the Imperial Houses of Parliament, which was exhibited at the Salon. The list of awards has now been published, and we actually find that the lady painter of small ability, who chances to be a Court favourite, has the distinction the Berlin artists intended for Herr Wallot. The names of the "large" gold medallists are Professor Koner, Señor Villegas, and Madame Parlaghi. Among the recipients of "small" gold medals are Professor Wallot

and Professor Schwechten. The latter is the architect of the Emperor William Memorial Church. The Society of Artists have at once elected Herr Wallot an honorary member, as a sign of their appreciation of his work. It is understood that Herr Wallot leaves for Dresden, to take the professorial chair he has accepted, directly after the opening of the Imperial Houses of Parliament.

A GLASGOW correspondent, in a letter which is too long to publish (as much of it is not to the point), complains of the observation in Mr. Penrose's recent address at the Institute, that Cockerell was the only architect except Schinkel who had made any success in the application of Greek architecture to modern buildings. He instances Playfair's Royal Institution at Edinburgh; and that no doubt is a fair example, and a very successful and fine design of its type. Hamilton's fragment of a Parthenon, on the Calton Hill, and the Burns Monument, are, however, mere copies. Our correspondent proceeds to instance the late Mr. Thomson, of Glasgow, but he did not belong to the period of which Mr. Penrose was speaking; and, moreover, his works could hardly be called Greek design in the same sense as those of Cockerell, Schinkel, and Playfair; they were rather a neo-Greek evolved by himself; nor do we think they will permanently command the degree of admiration once bestowed upon them. Playfair, however, had certainly a claim to recognition in connexion with the subject.

THE London County Council have passed a resolution which is as tyrannical as it is foolish: it is that every officer and workman in the employment of the Council should devote his whole time to the Council's service, and should not be allowed to take any private business or paid employment. The matter arose because some of the gardeners of the Council work for private employers after their day's work is done. It is not contended that any of the officers or workmen of the Council employ the time which properly belongs to the Council in the service of others. But the Council object to men using their leisure to increase their earnings. If, said Mr. Stuart, the Council allowed their men who worked eight hours to compete with other men by doing additional work outside the Council's service, they would defeat the principal object of giving shorter hours and better pay to their men. This motion is an endeavour to carry the dominion or mastership of the Council into the homes of its workmen and officers. According to this resolution, if a painter in the employment of the Council tried to make something extra by painting his poorer neighbour's room on a summer evening, he would be liable to some kind of punishment. This is as tyrannical as it would be for the Council to interfere with the amusements of its employés. It is an absolute attempt to prevent men from bettering their condition, which is essential to a wholesome state of society. It is neither more nor less than an incentive to idleness. As to its folly there can be no doubt, for even with an army of inspectors it would be impossible for the Council to know generally how their officers or workmen employed their time when they were miles—it may be—away from the work of the day. That this policy will introduce a system of espionage, by which some bad men will seek to pry into their neighbour's affairs in order to obtain their dismissal or levy blackmail, we cannot doubt. We can only hope that the Council will, as soon as possible, have the sense to cancel this unfortunate motion.

MR. LEANING, who is well known to many of our professional readers, in a letter in the *Times* this week, called attention to the fact that some of the candidates at the recent School Board Election advocated the direct employment, when possible, of labour by the Board, and he urged that such a step as this would tend to raise the rate for School Board expenses. We do not think much alarm need be felt on this score, for it would be impossible for the School Board to establish a Works Department as the London County Council have done. The amount of their building operations is not sufficiently large for such a department, and it is such scattered work that it can probably be done cheaper by local contractors under thoroughly careful supervision. We should certainly have been glad if candidates for the Board had given their views more largely on the subject of the buildings of the Board; but these practical questions have been largely lost sight of in the din of religious controversy. Mr. Leaning makes also several points against the new system of the County Council in conducting their own works and not employing a contractor; but it would require a very long and close investigation of figures, and of the work done, to estimate with any certainty the success or failure of this new departure.

A VERBATIM report of the proceedings at the recent meeting of cement manufacturers (to which we alluded in "Notes" in our two last issues) has now reached us. It is somewhat curious reading. The object of the meeting was nominally to form an association for the purpose of putting a stop to the adulteration of Portland cement, but really it was to induce cement manufacturers, if possible, to sign a statutory declaration that they had not—to put it in plain English—at any time added any material to their cement-clinker or cement. The declaration, it will be observed, is merely retrospective; it does not bind the signatories as to their future conduct. This is certainly a strange feature; for if there be any virtue in so forcibly disclaiming "adulteration" in past years, surely it is advisable to take an equally forcible oath against "adulteration" in the future. But the *crux* of the whole question lies in the meaning of the words "adulteration" and "adulterant," and until these are carefully and exhaustively defined it is folly, and worse than folly, to proscribe the addition of any and every material to the calcined chalk and clay. Certainly statements were made at the meeting which seem to show that Kentish rag-stone, and also some other kinds of stone, may be not only not adulterants, but actually beneficial ingredients, of Portland cement. It seems to us that there was more in the convening and object of this meeting than meets the eye; and after reading the detailed report we are of opinion, while utterly condemning the practice of wilful adulteration, that the attempt to cram this statutory declaration down the throats of cement manufacturers is a mistake, and will benefit no one.

IN the report of the Medical Officer of Health to the Hackney District attention is drawn to the exceedingly polluted state of the River Lea, especially because it is part of the scheme for the conversion of Hackney Marsh into a public open space, initiated by the London County Council, that the water of the Lea should be diverted on to certain parts of the Marsh to form artificial pools. As Dr. King Warry truly observes, unless some steps are taken to render the Lea water freer from pollution this act will be fraught with danger. It is obvious, that if some of the Lea branches, where the water is somewhat shallow (although the flow is fairly good), become offensive in hot weather, the proposed lake, where the flow will be reduced to a minimum, will also become offensive. Such a prospect is anything but encouraging to those interested in the future open space called the Hackney Marsh. By the Act of Parliament which constituted the present Lea Conservancy Board it appears that one of the primary duties of the Conservators is to prevent the pollution of the river; and Dr. Warry suggests that, in the interest of the public health, the Hackney Vestry should request the Conservators to do their duty in this respect.

THE site of Nos. 8, 9, and 10, with front gardens, in Nevill's-court, Fetter-lane, being about 5,200 ft. superficial, is to be let upon an eighty years' building lease. The property belongs to the Moravians (United Brethren). No. 10 has a notable history, which is apparently little known. It was bought, for we are informed 700*l.*, in 1738, with the adjacent chapel where Turner and Baxter preached, *temp.* Charles II., for the Moravian congregation when they first settled in England. It served for many years as the missionaries' hostel in connexion with that community's mission work, and there they began to print, one hundred years ago, their "Periodical Accounts," a journal of the society's evangelical labours. It was the home of the Rev. C. Ignatius La Trobe, secretary to the mission, and friend of Haydn; also of Count Reuss, minister of the congregation, and an intimate friend of the late Prince Consort. The red brick house, opposite what used to be the Excise Office, is conspicuous for its number of windows, and a heavy cornice. The interior is spacious and handsome, but a fire consumed last March the fine carved panelling of a room on the ground-floor. The *Antiquary* for the current month speaks in somewhat highly-coloured terms of the building and its garden, saying it is the old palace of the bishops of Chichester, and that "the present late Elizabethan pile replaced the building mentioned by Stow." Stow tells us that the bishops' house was next to the inn which (in 1286) the Black Friars conveyed to Henry de Lacy, Earl of Lincoln; he quotes Matthew Paris's account of its erection by Ralph Neville, Bishop of Chichester, who died there in 1244. The bishops' "inn" stood, it seems, on the west side of Chancery (or Chancellor's) lane, where are still Bishop's-court and Chichester-rents, and opposite John de Herlicum's forfeited garden. Dugdale cites two entries from the Close Rolls, by one of which Henry III. grants to Neville in 1226:—

> Gardinum cum pertinenciis quod fuit Joannis Herlicum in novo vico [Chancery-lane] ante Novum Templum Londini quamdiu Domino Regi placuit.

and another, of 1229, confirming to his Chancellor—

> Placeam illam cum gardino et pertinenciis suis qua fuit Joannis Herlicum in vico illo qui dicitur New strete ex opposito terræ ejusdem Episcopi in eodem vico.

Bishop Richard de Wiche, commonly called St. Richard, died in 1253; to him was dedicated the first chapel in Lincoln's Inn, and many of his successors occupied the house, Chichester Place, in Chancery-lane. By leases of Bishops Sherborne and Sampson, in the sixteenth century, most of the See's property there, together with de Lacy's house, passed to students of the law. In the thirteenth and fourteenth centuries we find the bishops paying the Prior of the New Temple 30s. a year in in respect of ground in Fyckett's Field (New Square), "pro domibus suis in suburbio Londini"—a payment re-leased to Bishop Stratford in 1338. Sampson's conveyance to William and Eustace Sulliard, 1536, specifies the Bishop's house and garden "on the south side of Lincoln's Inn." According to a statement printed in the Reliquiæ Spelmannianæ, Chichester Place was standing in James I.'s day, and its then leaseholders are mentioned. Moreover, in an Inquisition of Annoyances of the City of London, 1316, the house of John Langton, Bishop of Chichester, Lord Chancellor in 1292 and 1307, is described as being in Chancellor's-lane, which he had stopped "levando ibidem duas stapulas cum una barra."

THE *Illustrated Archæologist* is to be amalgamated with the *Reliquary*, and the first quarterly number will be issued at the beginning of January next. Messrs.

Bemrose & Sons will be the publishers, and Mr. J. Romilly Allen the editor. By combining the good points of these two magazines an appeal will be made to a larger number of readers than either could command by itself. The aim of the managers of the new venture will be to popularise the study of our national antiquities by means of short readable articles, fully illustrated; avoiding as much as possible the dry technicalities which render the proceedings of most archæological societies so unattractive to the general public.

THE Exhibition of Drawings in Black and White now on view at the Graphic Gallery, 195, Strand, although containing no works of special importance, is yet of interest as indicating a general raising of the standard in this class of work. The drawings consist of the originals from which the reproductions in the *Graphic* and *Daily Graphic* have been taken during the last few years. Amongst others we note the well-known studies of horses, and scenes in which horses take up the most prominent position, by Mr. John Charlton; these are executed in wash, as are also the works by Mr. F. Dadd, Mr. W. Small, and Mr. A. Hopkins, who is specially commendable in the life and character of his river and social scenes. The drawings of London life and character by M. Paul Renouard exhibit, more faithfully than the reproductions of his work, the care and accuracy of his characteristic delineation, while the chalk portraits by Mr. T. Blake Wirgman are striking examples of delicate finish in this direction, as also are some of Mr. Reginald Cleaver's studies for the *Daily Graphic*, of which a fairly large number are shown. A "black and white" executed in oils is one of the exhibits; and this medium, seldom used, seems to lend itself well to those artists who are unfamiliar with any other method. Architecture is in general poorly represented, but Mr. H. W. Brewer has a large pen-and-ink drawing, some 5 ft. by 2 ft., with slight indications in wash, of Cambridge, treated as a bird's-eye view, which is a good example of his painstaking and careful style. The exhibition shows, as already intimated, an improvement in the general level of black and white work, but are we to stop here? Surely the art which caters for the multitude, which in its educating influence has hardly its equal, and which, in these days of half-tone blocks, penetrates everywhere, is worthy of greater sympathy and attention from the best among our artists; and is it too much to hope that the day is approaching when the most gifted of our artists will be found to devote themselves to the public in this direction? It is largely so in the United States, as there some of the best talent is employed on book illustration. If the Academy were to open its doors occasionally to the election of men prominent in black and white work, it would at least be helping to foster a phase of art which at present is left too often to those who have perhaps failed in another direction.

THE collection of water-colour drawings by Mr. Sutton Palmer, exhibited at the Fine Art Society's Gallery under the title "Woodland and Water," contains many very attractive drawings showing very successful realisation of aërial and sun-light effects, but perhaps open to the charge of being a little too "pretty" in style. Indeed, Mr. Palmer seems to have two styles; and we prefer the broader and vigorous one shown in such drawings as "A Tributary of the Dart" (16), "Bisley Common" (49), "Great Langdale" (52), "A Sketch of the New Forest" (65), to the more smooth and delicately-worked drawings which form the bulk of the collection. The popular verdict, no doubt, would be in the other direction. Among the more elaborated drawings is a fine view of Durham Cathedral (20), from a point on the river opposite to that from which it is generally taken. Others that we specially liked are "Looking down on the Nidd" (11), "Knaresborough" (61), and "Head of Loch Lomond" (82), in which the lighted middle-distance is very good.

"A TRAVELLER'S Complaint" in the *Times* is that he finds churches and cathedrals locked at times when he wishes to see them, and when it would be reasonable to expect that they should be open. We sympathise deeply with "Traveller," and have often given way, we fear, to un-Christian temper at finding churches under lock and key and cathedrals barred by the payment of a fee, accompanied by the compulsory imposition of a guide, which latter is a real grievance

"To that man's mind who understands."

But the other side of the question is somewhat convincingly put by Mr. Albert Hartshorne, to the effect that the more rigid custody over cathedrals and churches exercised in England, as compared with other countries, is a direct result of the bad habits of the English middle and lower class public, who will break and damage things, if not looked after, either out of pure mischief or from the vulgar desire to possess relics. The public in other countries do not behave in this way, and hence are allowed free access to their churches. There is a good deal in this; but in regard to churches, of course, some allowance must also be made for the difference of feeling and habit in Catholic countries, where the church is a place of prayer for the faithful at all times, instead of being regarded merely as a place to go to on Sundays.

IN connexion with the subject referred to in the foregoing "Note," we may observe that some painful details have been brought to light as to the treatment of St. Sophia in the hands of the Turks, where "G. A. S.," writing to the *Times*, states that he has seen a Turkish functionary there battering down bits of the mosaic, for a small fee, to give to visitors. This is an interesting comment on the view which some people seem ready to maintain that the great church has been better off in the hands of the Turks than it would have been otherwise. Two architectural injuries at least the Turks have done (whether the mosaic-battering story be true or not): they have distorted the line of the building by their obliquely-placed furnishing to give the true direction of Mecca, and they have injured its scale and its general effect by the texts in Brobdingnagian Turkish characters stuck up on the walls. From an architectural, if not from any other point of view, we have sometimes thought that a new Crusade might be proclaimed, to rescue St. Sophia from the hands of the Turk. It would elicit very considerable sympathy and support from those who are interested either in architecture or in history.

WE referred last week to the conditions for a competition for a chapel at Portmadoc. In the course of a somewhat impertinent letter which we have received from a member of the committee, it is stated that they have now raised the architect's commission from 4 per cent. to 5 per cent. on the outlay: which shows that public criticism on these points is not without its effect. Nothing is said, however, as to rescinding the preposterous condition that the architect is to pay his own travelling expenses in superintending the building.

A CORRESPONDENT sends us two advertisements from a Birmingham paper, which form an interesting commentary on the question of "Architecture, a Profession or an Art?" The wording of the advertisements, omitting names and addresses, is as follows:—

"MANUFACTURING and business premises and building sites for Sale and to Let.—For particulars see ————'s Land and Property Advertiser, obtainable gratis at their offices" (address follows).

"RESIDENCES erected in any locality to suit the requirements of purchasers upon advantageous terms of payment.—Further particulars on application to ————, architects" (address follows).

The blank in each case is filled by the name of the firm, which consists of three partners, of whom the senior member is a Fellow of the Institute, and the second member an Associate of the same body. This may be "business," no doubt; but is it architecture?

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE second meeting of the present Session of the Royal Institute of British Architects was held on Monday last, at 9, Conduit-street, Mr. Alexander Graham (Vice-President) in the chair.

Mr. W. H. White (Secretary) announced the decease of Mr. Charles G. Hood Kinnear (Fellow), Edinburgh. and of Mr. Frederick Hemings (Associate), London.

The Chairman stated that the following twenty-nine probationers had passed the Intermediate Examination, and had been registered as Students of the Institute, viz. :—

Percy Morris, Blackheath; Thomas Sharpe, Kendal; Christopher William Surrey, South Kensington; John Cubbon, Birkenhead; George Lewis Sheppard, Worcester; Charles Samuel Frederick Palmer, Kilburn; Edgar Stones, West Hackney, N.E.; Albert Herbert, Leicester; Harold Conybeare Trimnell; Arthur Maryon Watson, B.A.Lond., 9, Nottingham-place, W.; Henry Tutty Fowler, Kendal; Arthur Wheatley Waddington, Mirfield, Yorkshire; Alfred Harry Gloyne, Shetford, Manchester; Gilbert Love, Bath; Thomas Hubert Hardinge Vowles, Chorlton-on-Medlock, Manchester; George Edmund Clay, Warrington; Henry Edmund Davey, Peckham, S.E.; John Forrest, Warrington; Harry Daborn Day, Godalming; William Frederick Baron Gates, Wing, Bucks; Henry Augustus Ellis, Cambridge; Charles Vincent Cable, 176, Stockwell Park-road, S.W.; James Herbert Norris, Godalming; Vincent Steadman, Clifton, Bristol; Ralph Henry Morton, South Shields; Harold Stevens, Liverpool; Edward Lewis Harrison, Hampton Wick, Kingston-on-Thames; Henry Francis Traylen, Stamford; Stephen Ellwood Barrow, Jesmond, Newcastle-on-Tyne.

Of the nineteen Probationers who were relegated to their studies until next March, six were relegated in all subjects of the Intermediate Examination, two in six subjects, one in five subjects, five in four subjects, one in three subjects, and four in two subjects.

The Architecture of China.

In the absence of Mr. Frederick M. Gratton, who was on his way to Shanghai, the paper which had been prepared by him, entitled "Notes upon the Architecture of China," was read by Mr. W. Kidner. The following is a short abstract of the paper:—

There are, in China, cities of four classes: those of the first rank termed *Foo*, the second *Chow*, the third *Ting*, and the fourth *Hsien*. In ancient China the number of *foos* amounted to 159. At the present time there were said to be 1,281 cities encircled by high crenellated or embrasured walls, averaging from 25 ft. to 30 ft. in height, sometimes flanked with towers. They were of stone, of brick with stone or granite bases, or with stone or granite facings; substantial structures of carefully-prepared and good material. Among these cities were Pekin, the present *yellow* capital; Nankin, previously the capital of the empire; Hangchow, also formerly the imperial capital, and of great historical interest; Soochow, the "City of Beauty and Pleasure," the Paris of the Chinese; and Canton, one of the first cities of the empire, with walls some 20 ft. thick, and varying from 25 ft. to 40 ft. in height.

Shanghai was a *hsien*, with brick walls three and three-quarter miles in circumference, and seven gates. There was an immense suburb outside the walls. Several cities, like Chêng-tu (*foo*), the capital of Szechuen, were clean and in good preservation, with wide paved streets, and in all respects fine cities, hives of industry and centres of trade; whilst others were evil-smelling places, with narrow alley-ways and dense populations.

An exceedingly rare example of a three-storied erection was the "City Temple of Soochow." Some of two stories in height were still to be found; but by far the larger proportion were lofty one-storied buildings, with massive open-

timbered roofs, originally dedicated to the service of individual deities, but now employed in a mixed worship of the triumvirate of Buddhist, Confucianist, and Taoist divinities. The general plan was of three buildings, or halls, parallel with and behind one another, each entered through the other, the third being the largest and most important. The workmanship was solid, with a plethora of ornament. The approach was often by fantastic bridges, or massive flights of steps and handsome gateways.

Magnificent temples and shrines had been erected in the imperial capitals. Of these might be mentioned the Temples of Heaven and Earth at Pekin, each in a square, park-like, walled enclosure of some three miles circuit. The former contained the north and south altars; circular, roofless, terraced platforms, encased in white marble. The northern altar was in three terraces, diminishing from 120 ft. to 60 ft., each surrounded by a marble balustrade. The platform was approached by eight triple flights of nine steps each, and carried the circular fane dedicated to the "Queen of Heaven." The roof, rising in three pagoda-like heights covered with glazed tiles of a lovely cerulean blue, was open-timbered, giving view to the highest point of the gilded interior. The main and second roofs were supported by twelve elaborately-decorated columns, and the highest one by four pillars. Midway between the two altars stood the circular tower containing the tablets, also roofed with blue tiles, the window openings filled with blue glass rods, which produced a dazzling effect in the sunlight. The southern altar was very similar to the northern, its approach being spanned by two sets of three beautiful white marble memorial arches (*Pei-loh*). The Temple of Earth was in many respects like the Temple of Heaven, save that the predominating decorative colour employed was green, and that it was much simpler in style and adornment, the altar being square. Temples were also erected to Light, and to the Sun and Moon. To judge from the records, these temples must have been marvels of beauty in the day of their prime. Several buildings had been considerably damaged by fire in recent years.

The Yung-ho-Kung, or great Llama Temple, in the Tartar City, was roofed with brilliant yellow glazed tiles. The entrance was adorned with animals carved in stone, and the interior almost covered with innumerable carvings of birds, beasts, men, &c. In the Main Hall stood an enormous wooden figure of Buddha, some 70 ft. in height, coloured to imitate bronze. There were, besides, the "Imperial Ancestral Temple," and the Tai-miaou, or Imperial and National Temple, in Pekin.

What were called by the Chinese "Beamless" temples might be seen near to the Ming Tombs at Nankin, at Soochow, and a few other places. They were stone and brick structures of considerable size, with parallel walls forming several chambers, and covered with brick barrel-vaulted arches. Some were now little more than ruins; others had many arches still standing after surviving centuries of neglect; there was an entire absence of wood in their construction. They were said to have been erected about the eleventh century A.D., during a period of great Buddhist fervour, as fire-proof repositories for archives and relics.

In regard to palaces, but few remained. The celebrated *Yuen-Ming-Yuen*, or Summer Palace, was a gem of art. It covered about twelve square miles, and contained some thirty distinct residences for the emperor, ministers, eunuchs, servants, and others. Passing through the grand portal into the paved courtyard, the great reception-hall, or Hall of Audience, 120 ft. long, 42 ft. wide, and over 20 ft. high, in all the glory of its gilding, painting, and carving, met the eye, erected upon a granite platform, surrounded by a peristyle of wooden columns, with graceful roof and elaborately-fretted eaves. Facing the central door was the emperor's carved ebony throne on a marble-tiled floor. Here were grouped all the royal luxuries that an Eastern mind could conceive; whilst pleasure-grounds, buildings, rockeries, lakes, grottoes, in almost bewildering plenty, occupied the vast and magnificent park-like domain, the private suites of rooms of the emperor and empress, containing all that was lovely, attractive, and picturesquely fantastic in Chinese art. Such was one of China's palaces at the time of the Anglo-French invasion, but barely spared from the general wreck of much that could claim architectural merit in her capital.

Pagodas were constructed of various materials, from wood to cast-iron, and mention was made in Chinese records of some of white marble and copper. They varied from three to thirteen stories in height, nearly always, however, consisting of an odd number, and usually pyramidal in contour. Some were solid with no interior chamber, others hollow; the larger ones of the latter class contained, instead of an altar, a smaller pagoda inside the larger structure. One of thirteen stories existed at Pekin 275 ft. 5 in. high, the figures being formed of moulded brick. The Peh-ta-sze, or White Pagoda Temple, erected in 1100, and rebuilt in 1819, was said to have had the appearance of jasper, and contained 2,000 clay models of pagodas, besides images, its most conspicuous feature being the great copper umbrella-shaped top.

The porcelain tower of Nankin was originally designed of thirteen stories, only nine of which were executed; it was commenced in 1412, and took twenty years to complete. It stood on a raised platform, and mounted to a height of about 250 ft. It was octagonal in plan. The general effect was described by a Chinese writer as having been of dazzling brilliancy; the predominant colour was green, and it was one of the best examples of its class. It contained about 2,000 images, and had 150 bells pendent from the roof. It was destroyed by the insurgents in 1856-57, and was an irreparable loss to the country.

Some so-called pagodas might be better called towers. Those of Wuchang and Pekin were curiously-shaped structures, with a much greater approach to domestic than religious origin and uses. The summer-houses and garden pavilions were also pretty and attractive to a degree.

In regard to memorial arches and gateways, the *Pei-loh* (often misnamed triumphal arch) was a memorial arch or gateway, sometimes comparing closely with its probable ancestor the *Toran* of India, and their offspring the *Torii* of Japan. Some were solid and massive erections, whilst others consisted of perpendicular shafts of granite, stone, marble, or wood, with horizontal ties; or, as in the more elaborate examples, with enriched entablatures, covered with projecting roofs at various levels; often with several spans in a row. They were often elaborately pierced and sculptured, richly ornamented with bas-reliefs and inscriptions, the harmony of colouring rendering the effect greater than could be readily described.

The Mausolea and Tombs of the emperors and grandees were imposing resting-places. The Ming Tombs, now in ruins, near Pekin, had been elaborately described by various authors. The spacious roadways or avenues of approach to these sacred precincts were usually lined with colossal figures in stone or granite monoliths, of elephants, camels, lions, dogs, horses, mythical animals, and men, in successive pairs at regular intervals—the approach to the Ming Tombs having thirty-two pairs of these images, the largest about 12 ft. in height.

The principal highways of China being her navigable rivers and canals, the number of bridges was legion. Suspension-bridges of rude form, and with but the barest elements of engineering skill, appeared at intervals in various parts of the country; but by far the greater proportion were those with flat spans and piers, or arches of varying shapes, built of stone, granite, marble, brick, or combinations of these materials.

The *Wan Show Keaou*, or bridge of "Ten Thousand Ages," at Foochow, in the province of Fokien, was one of the best-known and most celebrated of the flat-spanned variety. The bridge was nearly 2,000 ft. in length, and 14 ft. in width; the roadway of solid blocks of grey granite, resting on piers of the same material.

A bridge near Pekin, commonly termed the "Marble Bridge," was of seventeen stone-arched spans, the roadway being protected by white marble balustrades. The nine-arched marble bridge near the same capital was more legitimately entitled to the name, as marble was more generally employed in its construction. This was some 600 ft. long.

The majority of the arched-bridges of China were of stone or granite. The *voussoirs*, instead of being thick blocks of stone with radiating joints, were generally of thin curved or shaped slabs laid lengthwise with the arch, the slabs often measuring 4 or 5 ft. in length, by a couple of feet wide, and some 6 or 8 in. thick. Alternating with these long courses were narrow *voussoirs* at right-angles to the slabs, keyed into the masonry backing.

Long before the Greeks or Romans understood the properties of the arch, it was known and employed in China.

The Chairman said there could be only one opinion about the importance attaching to this subject. Architects were all more or less travellers, but he did not believe that many of them had been in China, and passed through the gates of Pekin. At the same time, he was sure that some of them had noted the peculiarities and characteristics of that very remarkable people the Chinese, and had seen in their methods of construction many things which were not only of interest to them, but which must have exercised an influence on the architecture of other countries.

Professor Aitchison proposed a cordial vote of thanks to Mr. Gratton for his paper, and to Mr. Kidner for kindly reading it. As had been remarked, they were judges, or students at any rate, of all the architecture which the world had seen, and they were greatly in want of it, for while almost every country had produced a style of its own, this country had yet to take that step.* He hoped, however, it would not be long before they did that, considering that they had the whole world before them, and that a large proportion of the members present had travelled in different parts of the earth. He envied Mr. Gratton the opportunities he had had of seeing the splendid way in which the whole of the interiors of the temples and other buildings of China were coloured, and it was one of the things they would all look forward to seeing introduced into England more than it had hitherto been. It was sad to think that the parsimony of our Government prevented the great discovery of the Palace of Darius at Susa being made by an Englishman. The consequence was that the Louvre now possessed some of the splendid friezes done in glazed bricks. The French, too, with the aptitude of artistic skill which distinguished them, immediately set to work, and at the last exhibition at Paris almost all the roofs were clearly animated by the lessons they had learned from that monument of colour in Persia. He wished the paper had given them a little more account of the charming lighting which was carried on by a lamina of oyster-shells. Until the introduction of glass at a low rate, very few openings were glazed. The few that were glazed in old times—as he had seen in out-of-the-way places in Italy—were glazed with parchment, while others had shutters, pierced not like the ornamental ones, but simply with bars put together into patterns. They were very much indebted to Mr. Gratton for his interesting paper, and also for the photographs shown on the wall, and he hoped at some future time they might have drawings of the coloured temples which the author had seen.

Sir Henry Howorth, in seconding the vote of thanks, said the subject contained many points of interest. He could not help thinking that English architects might sometimes well take a few lessons from the Chinese. When one saw changes in the shape of the buildings and their ornamentation it was certain that there had been contact with some other race and civilisation which had brought East and West together, and had diverted the whole course of construction and ornament into an entirely different line. For instance, the astronomical constructions at Pekin, which were shown on the wall, were designed by the Jesuits for the Chinese Emperor. Going further back, it would be found that Persian workmen, who went into China in 1260, introduced the making of blue-and-white china, for what was termed the blue Nankeen China was a product absolutely unknown before that period. The Chinese quickly adopted this, and the beginning of the blue-and-white Chinese porcelain dated from that time. Then, again, some of the towers which, undoubtedly, were copies of wooden architecture, were, he believed, imported into China by the Buddhists from India, in the sixth and seventh centuries. He agreed with M. Dieulafoy, that the earliest civilisation of China came from the West, and amongst other things the art of making bricks, which were made of curious sizes and shapes, and were distinctly imitations of those found in the ruined mounds of Elam and Mesopotamia. The pagodas with many stories had been primarily copied from the pyramidal buildings found in Chaldea, and were one of the many proofs that the early civilisation of China came from that direction.

Mr. R. Phené Spiers said that though he had never been to China, he had inspected the photographs with great interest. Many of them were quite unknown to him, and he had been struck with one of the first parts of the paper—referring to the resemblance to Chaldean and Babylonian structures. What Sir Henry Howorth had said had rather shown him that the resemblance was not accidental, but was possibly due to the fact that in the very

* What about English Gothic—the Early English and Tudor styles especially?—ED.

early days of China there must have been some connexion between the two countries. It was possibly from Chaldea that the Chinese had derived their great knowledge of astronomy at various times, and what had been said by Mr. Kidner as to the existence of enormous portions of agricultural land in these great cities reminded one of Babylon, the length and breadth of which appeared to have been so immense that one could only imagine that the greater portion of it must have been occupied by agricultural land for the support of the inhabitants in case of a siege. One point, however, he had been looking for in vain in the paper. The paper was about the architecture of China, and the question which came nearest to them now was whether there was anything in that architecture which gave it a real claim to being a style. One could not help being struck with the massiveness and beauty of some of the structures exhibited on the walls. There was a representation of a gateway with three arches, of which he possessed a copy, and he had often admired the simplicity of the lines and the construction. It was immensely suggestive, as having some principles worthy of copying or imitating. He was speaking of the massive construction of the lower portion of the gateway, and, until he had seen this photograph, he had no conception that the Chinese had ever constructed buildings with such constructive features, those of so many of their other buildings being of a merely ephemeral character. There was no doubt that the pagodas and temples were built as described in bamboo for certain reasons. The material of bamboo was of such a nature as required it to be used without its being squared; therefore, while all our timber was at once squared and wrought, the bamboo must not be touched. It was no doubt due to this that the Chinese system of construction was of a totally different character to anything to be found in this country. The system of putting a series of beams one above the other, and supporting the tiling at the end, was a scheme of construction of which the people of this country had no knowledge. It had been suggested that the Chinese had better adopt our system of trussing, but with the bamboo that would be impossible; moreover, they had evolved a system which was better for their construction. There was another point which would appeal to all architectural students. If there was any detail which attracted more attention, and to which they attached more value as judging of style, it was that one magnificent feature which we called the capital. Now the Chinese had never adopted that feature, and that was one very great want in their style. Mr. Gratton had said little about one very interesting subject, that of the beamless temples. They wished to know what the arches of these were, and how they were constructed. The description given of these was almost akin to that of the famous granaries of Rameses II., which had brick vaults, with construction of a peculiar kind. They were all built flat-wise and laid in sloping rings, without centreing, which was an important characteristic of the Babylonians, the system of laying arches flat being a Babylonian system of building. The flat brick laying up against the previous structure was sufficient to retain it in its position, until all the *voussoirs* of the arch were built. That showed that the Chinese either learned, or found out at some period, the method of building arches without centres. As Mr. Gratton had again gone out to China, it would be interesting if he would turn his attention to some of the simpler brick construction of the country, to see if he could ascertain the earliest methods adopted there.

Mr. H. S. Ashbee wished he could have heard this paper before he went to Pekin, or, better still, could have had the guidance of the author. As an outsider, one could not fail to be struck by the marvellous architecture of that very remarkable country, but much explanation was needed before one could thoroughly appreciate it. He did not think, however, that the buildings to be found in China could be all adapted to our way of living, or to our state of civilisation. The disposition of the city of Pekin was so remarkable that a few words on the subject might not be out of place. Pekin consisted in reality of four cities, the one being inside the other. There was, first, the palace and gardens of the Emperor; around these were the villas of the high authorities; then came the city of the soldiery, in which were situated the Embassies and the one hotel; while outside all again was the Chinese city—each being shut off from the other by walls, with gates closed from sundown to sunrise. The Hall of Examinations at Pekin contained nothing remarkable from an architectural point of view, but the system of the whole thing was peculiar. Each student was shut up during the examination in his little cell, the doors being closed, and he not being allowed egress until the examination was over. The student was not allowed to take any books with him; his food was passed in; and should he die during the time of the examination, his body was taken out through a hole in the wall. There was another curious thing in China, which had more or less to do with architecture—viz., the House of the Dead. When any one died, especially if he were a man of position, he was not at once buried, but a sort of chamber was hired for him in the House of the Dead, and there he was surrounded by representations of what he had loved during life. He had frequently seen the dead bodies surrounded thus with imitation piles of gold, or the figure of a favourite servant or horse.

Mr. Emerson remarked that Mr. Gratton had mentioned some statues of Buddha 70 ft. in height, and coloured to represent bronze. He would like to know the material these were made of.

Mr. Kidner replied that he believed these were made of plaster. Outside Yokohama there was a statue made actually of bronze, 70 ft. or 80 ft. high, cast in different pieces, and all rivetted together; but the various figures of Buddha he had seen in Chinese temples had been chiefly of plaster made in imitation of bronze.

Mr. W. Simpson contributed some notes on Mr. Gratton's paper, in the course of which he remarked that Mr. Gratton's account of the Chinese Guilds would be a surprise to those who never heard of them before. The plan of the Buddhist Temple, which was also a monastery, bore a slight resemblance to the rock-cut viharas of India, and yet the Chinese arrangement of an ordinary house-plan predominated. The "Beamless Temples" were new to him, and were, he thought, an exception to the usual Chinese mode of building; and Mr. Gratton's description of them suggested the question as to whether they might not have been a rude imitation of the Indian Buddhist Chaitya cave. Mr. Gratton had said that they were constructed "during a period of great Buddhist fervour." The *Yang* and the *Yin* were referred to only as a decorative form. They were, he (Mr. Simpson) believed, far more than that in Chinese architecture. The great Temple of Heaven in Pekin was circular in form, because it symbolised Heaven, or *Yang;* the Temple of Earth, again, was square in plan, as the earth was *Yin.* Even the common mound over graves, such as were seen around Shanghai, were, when new, and not changed by the action of the weather, formed with a square base, which was *Yin;* and upon that was a dome of earth, which was round to represent the *Yang.* As to the question of thirteen-storied pagodas in China, he thought there need be no doubt as to the number; the northe.n examples about Pekin had merely roofs in place of stories, and the Pa-li-chang Pagoda at Pekin had tnirteen. Mr. Gratton had referred to the Tung-Chow Pagoda, which had also thirteen stages. A pagoda with thirteen rooms, one over the other, would be a huge pile, and not likely to be often repeated, but the instances given showed at least that there was no objection to the particular number. Mr. Gratton did not venture on the tent theory for the origin of Chinese roofs. Mr. Simpson mentioned that in a former paper of his, read before the Institute, another theory was suggested, which still appeared to him as far more likely to explain the curves in Chinese roofs than the "tent theory." That is that the form was the result of having used bamboos, or, it might be, some other wood that was liable to bend from weight being put upon it. What was known as the Bengal "thatched roof" was, they knew, produced in that way, and it gave birth to certain curved lines which were recognised as beautiful in Indian architecture, and these forms were now repeated in stone and marble. It was in keeping with their experience that architectural forms resulted from the materials used in construction, and this theory would be in accordance with that experience, while the tent theory would be entirely opposed to it. If anyone could work out the meaning and origin of the complicated system of brackets which formed what he might be allowed to call the architrave of a Chinese building — because the brackets come between the transverse beam and the roof—this peculiar construction, if it were explained, might throw some light on the first beginnings of the Chinese roof.

The vote of thanks was then passed to Mr. Gratton for his paper and to Mr. Kidner for reading it, the latter gentleman briefly replying.

The Chairman then announced that the next meeting of the Institute, to take place on Monday, December 3, would be a business meeting for the election of members, and when a question connected with the Statutory Examination for certificates to act as District Surveyor would be raised.

THE INSTITUTION OF JUNIOR ENGINEERS.

THE inaugural meeting for the Session of 1894-95 of this body, which last Session changed its old name of Junior Engineering Society to that of the Institution of Junior Engineers, was held on the 16th inst., when the President-elect for the year, Mr. Alexander Siemens, C.E., was introduced by the retiring President, Mr. Wolfe Barry, C.B., as a member of "that renowned family of engineers to which the whole world was greatly indebted." In the preliminary proceedings it was stated that the last was the most prosperous year in the history of the society, a result they mainly owed to the devotion of the retiring President to their interests, and to his influence as an eminent engineer. Their visits under his guidance to the Tower Bridge and the Barry Docks at Cardiff had been as full of instruction as of interest. A cordial vote of thanks was offered to Mr. Wolfe Barry.

The award of the premium for the best paper of the year to Mr. G. F. Burt for that on "Design in Locomotive Engines" was announced, and the new President read his inaugural address, the theme of which was "Patent Legislation."

The President is clearly not an advocate of the principle adopted in some countries of a preliminary official examination. Law-suits were quite as frequent in countries where a preliminary examination existed as in those where patents were granted without it. The cheapening of patents had not proved to be the unmixed blessing some of its advocates had expected, although its effect had been to increase enormously the number taken out. Up to 1882 the number of British patents applied for annually amounted to 3,506 on the average of the previous ten years, but this average had steadily increased year by year since the new law was introduced, until in 1893 the number had grown to 25,000. With such a vast number of new specifications constantly accruing, it became extremely difficult to know what had been done by others in any particular class of inventions, and the reprehensible practice had grown up of making provisional specifications as vague as possible, with a view to being able to include in the complete specification all the ideas of other inventors that could be discovered in the nine months' interval, so far as they could be worked into it. This keen rivalry among inventors had resulted in a sub-division of labour which was being carried further every day, and was making men every day more and more dependent on their fellow-workers, but the share that any individual worker could have in the advancement of his art or in the introduction of novelties must become smaller and smaller, and it was obvious that those people had the least chance in the race who were not well acquainted with the branch of industry in which they wished to introduce improvements, and who had not studied the technical literature of their subject. The efforts even of men who devoted their whole lives to the improvement of some particular branch of industry were often obstructed by some special or unlooked-for interpretation of the law. An instance in England was shown in the famous Bessemer process of making steel, which had reached its present importance mainly through the suggestion of Mr. Mushet to introduce "*spiegeleisen*" at a particular point of the process, a modification both novel and useful, which, nevertheless, was not considered by the authorities a patentable invention. An instance under the French law was the monopoly which M. Gramme succeeded in securing, of using copper-wire brushes at the commutator in dynamo-electric machines. Although such brushes had been long used in magneto-electric machines, the French law confirmed the monopoly of them in dynamos to M. Gramme, because he was the first to apply them in that class of machines, and the result would have been disastrous to industry had it not been for the accident of the publication previously by an Italian professor of a description of the other parts of the Gramme machine. The majority of inventors, or, at all events, a too-numerous class of patentees, were those sanguine men who seemed quite independent of college or workshop, who were encouraged by the popular superstition that inventors are heaven-made and

can supply any want if only their attention is drawn to it. James Watt, according to the popular view, had only to see the lid of a kettle moving up and down to discover the steam-engine, but, as a matter of fact, he had to study and work very hard before he brought his invention to a successful issue. In concluding his paper, the President said he did not wish in any way to discourage them from trying their hand at inventing, but to impress upon them the necessity of making themselves thoroughly acquainted both with natural laws and existing practice. They could not master their subject without careful study and hard work, but if they devoted their time to the acquisition of knowledge they would be well fitted to contribute their share to the progress of engineering.

The usual vote of thanks was subsequently accorded to the President.

Illustrations.

DESIGN FOR A BANQUETING HALL.

THE chimney-piece in this design is of alabaster principally, with bronze capitals to the columns, and panels of mosaic in the arcade above, showing figures bringing the produce of the earth for the use of mankind.

The inlaid Italian walnut panelling, 6 ft. 6 in. high, is divided by pilasters—pedestals supporting statuettes emblematic of the different parts of the globe, and of Industry, Abundance, and Peace, of Music, Song, and Dancing.

On the wall space above are paintings in "spirit fresco," that on the left representing Triptolemus, who, having travelled the earth teaching the inhabitants legislation and how to sow corn and make bread, returned in triumph to Eleusis and established the festivals there in honour of Ceres.

On the right the subject is the Dionysia established by Bacchus, who taught the people the use of the vine, and cultivation of the earth with oxen.

He instituted this festival in commemoration of his Indian expedition.

Above this a large cove decorated with painted arabesques leads to the panelled ceiling of modelled plaster, slightly tinted and heightened here and there with gold and colour.

The design, by Mr. W. F. Randall, occupied a prominent position in the Architectural Room at the last Royal Academy Exhibition.

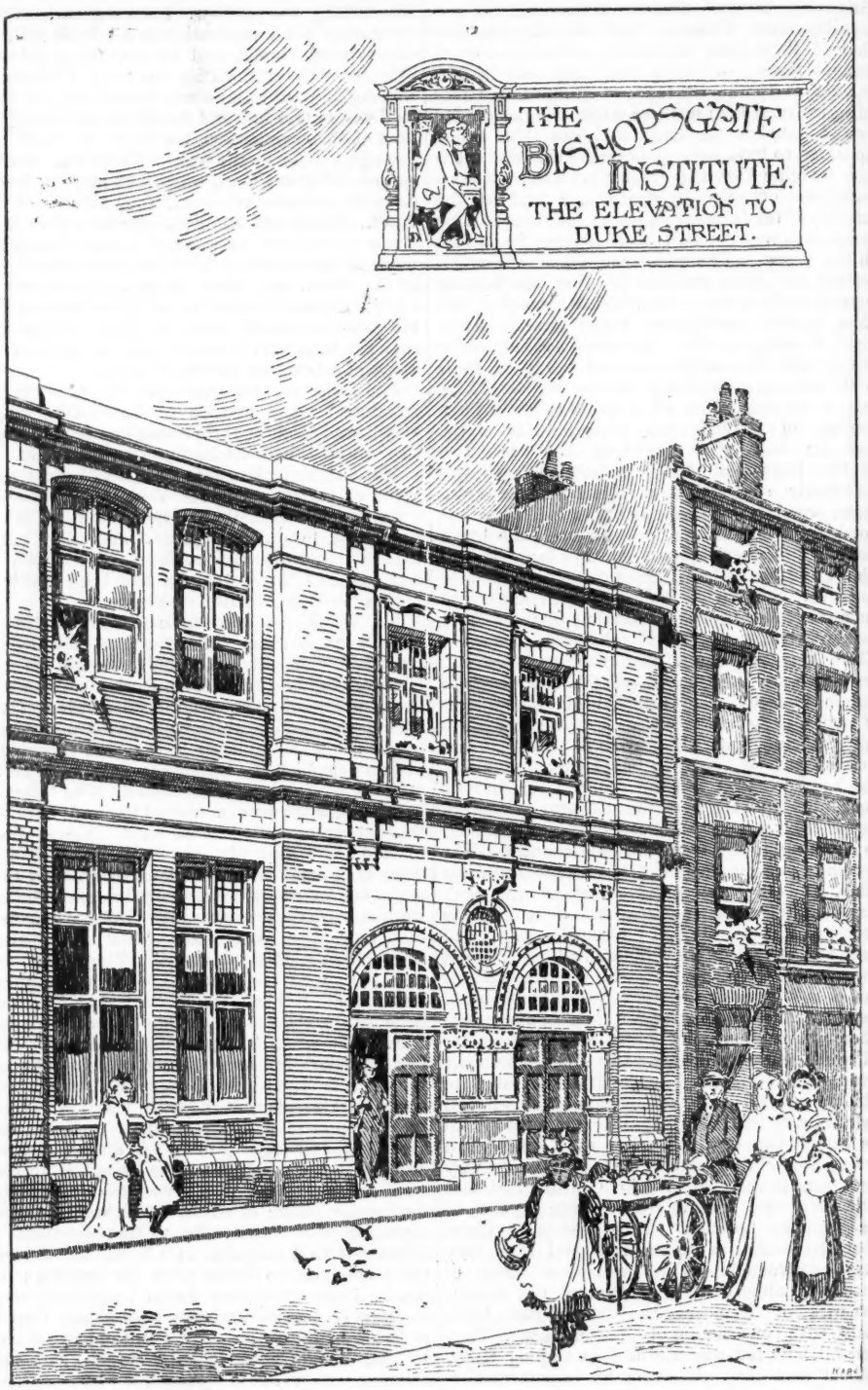
NEW INSTITUTE, BISHOPSGATE.

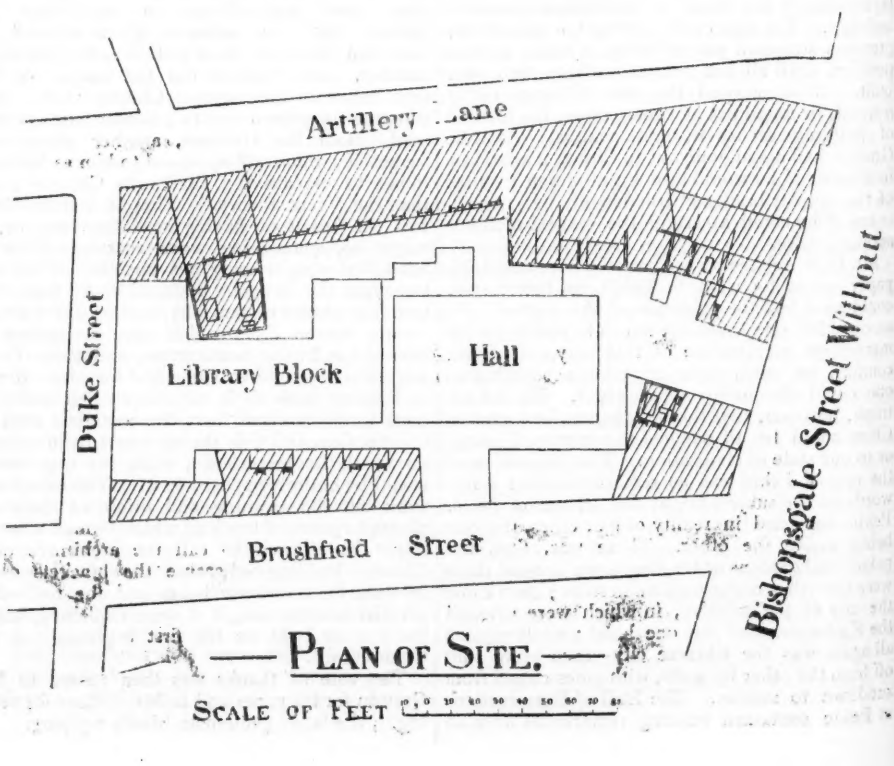
THE scheme prepared in 1891 by the Charity Commissioners for administering the charities of the parish of St. Botolph, Bishopsgate, included the "providing and equipping an Institute and branches in connexion therewith," and we illustrate this week the building (close on completion, and to be opened by Lord Rosebery to-day, Saturday) which has in consequence been erected by the Governors of the Bishopsgate Foundation.

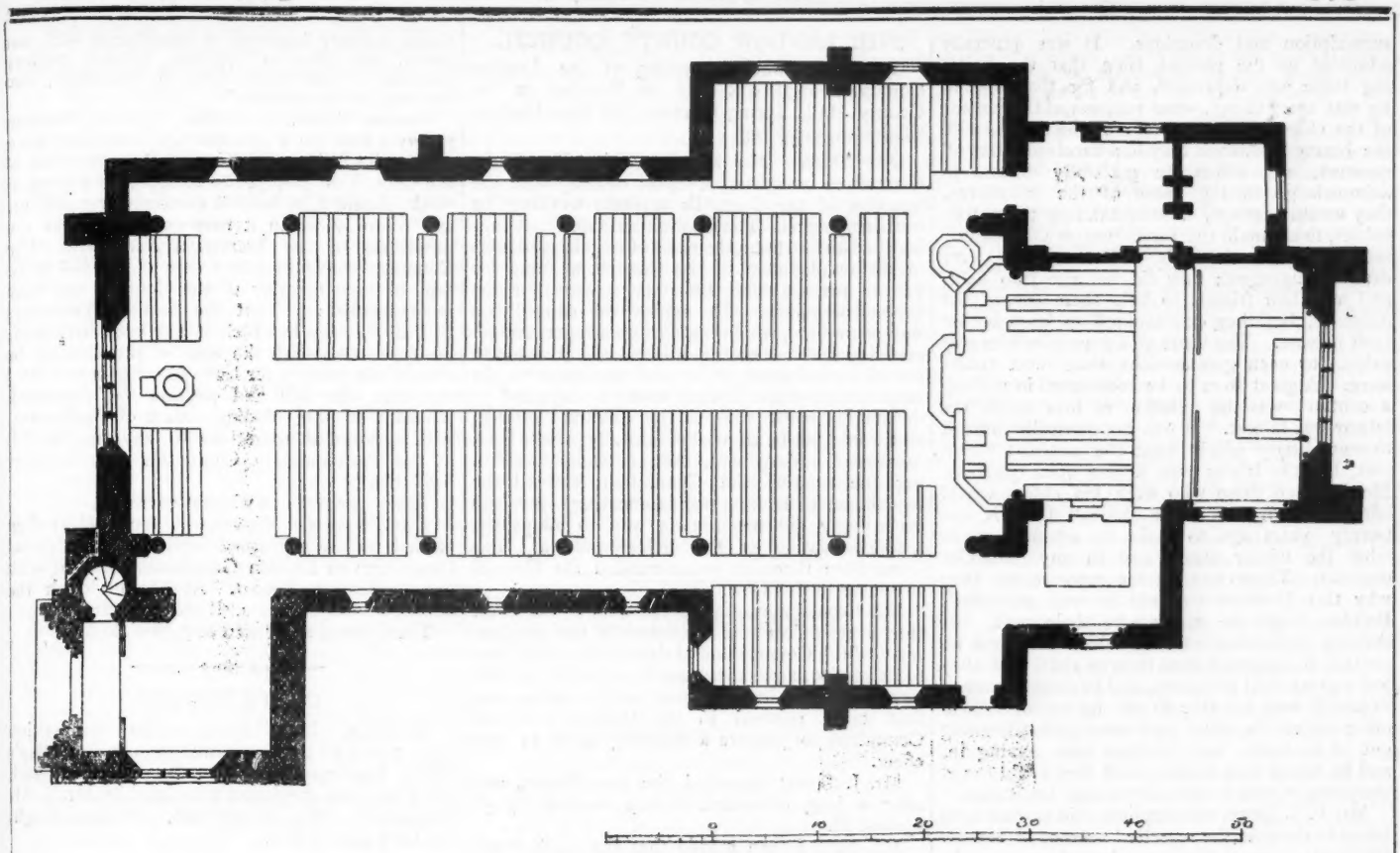
The site purchased with the sanction of the Commissioners is one that offered considerable difficulties to the architect. The block plan will show that, with a narrow frontage to Bishopsgate, it extends in an irregularly-shaped figure of an extreme length of 273 ft. from that street on the west, to Duke-street on the east, with a third frontage in Brushfield-street. With the exception of these comparatively small openings on to streets, the whole of the site is surrounded with property, principally of the warehouse and manufactory class. The fact that all these buildings could claim rights of ancient lights and air, and that the old premises removed for the Institute were in great part only of one story, will indicate that great care was necessary in arranging the new building so as not only to avoid infringing any of those rights, but to satisfy the many co-owners of the adjoining party-walls. Indeed, in connexion with the latter, no less than thirty-four "party-wall notices under the Act" were served at the commencement of the work.

The plans indicate without need of much explanation the arrangement of the Institute, which is intended to provide that crowded part of the City with a public library and a hall for meetings, concerts, picture-exhibitions, &c. It was not deemed expedient that the scheme should arrange accommodation for technical education.

With a view to obtaining greater quiet the library has been planned on that portion of the site furthest from the crowded thoroughfare of Bishopsgate, but access is gained to it not only from Duke-street (on which it faces), but from Brushfield-street and Bishopsgate. It is possible







St. Peter's, Bushey Heath.—Plan.

that the hall will be used in connexion with the library as a reading-room or "common-room."

Attention may be called to the fact that the lending-library (as a glance at the disposition of its fittings will show), is arranged for a system of working that is unusual, but which is pronounced to be a successful one in those tentative cases where it has been adopted. If its results here answer the expectations of the librarian as fully as he expects, the new principle is likely to effect a radical change in the method by which lending-libraries are worked, and so to be of interest to architects who have to deal with such buildings. In place of the old and somewhat cumbrous method of consultation of catalogue and register—one which tells hardly on the borrower whose mind is not stored with many names of books—the public is (subject to proper watching), to be permitted to have access to the book-shelves, and to select from them the particular book wanted. Attendants, placed at the two turnstiles near the entrance, check and register the borrower and his book. Of course, supervision of a constant character is arranged for, but it is hoped that this will be lightened by the wish of the public to protect the property of the public, and that each visitor will be interested in checking abuses.

The lending library is now being fitted with shelving for 20,000 volumes, but accommodation for a larger number can be found both here and in the reference library, which is arranged at present for 10,000 volumes. The basement, which is well lighted, finds storage for a considerable number more, and labelling and book-binding workshops are provided here, as well as certain staff-rooms.

The reading-room on the first-floor accommodates about 200 readers. The arrangement of the fittings (which are in walnut, those on the ground-floor being in English oak) will be understood by reference to the plan.

As is shown, one portion of this room is arranged for women-readers, but after due consideration no separate reading-room for boys is provided. The stairs to the library portion and to the board-room in Bishopsgate are of solid teak. The walls of the corridors (which, in compliance with the provisions of the London County Council, have in no case any projection of piers, &c.) and of the staircases are lined with tiles, and the floors of the former and of the vestibules are of marble mosaic set in red cement. The floors of both library and hall are laid with Goddard's patent oak-block flooring, and are of fireproof construction, upon Messrs. Homan & Roger's system.

The heating system is that of Messrs. Ashwell & Nesbit. The fresh air entering at the back of the radiators, shown on the plans, is delivered into the rooms adequately warmed. Two Trentham Cornish boilers in the basement serve as occasion requires for the heating of either the library or the hall or both.

The foul air is carried away from the library by a system of exhaust flues fitted with gas-jets.

The hall, 80 ft. long by 40 ft. wide, will seat 520 people. The exit doors (all of them 10 ft. wide) open so immediately on to thoroughfares that there is little doubt but that the whole of the audience could, in case of panic, find its way out of the building in an exceptionally short time. With a view to its being used for the occasional purpose of a picture-gallery, a top light is provided in addition to the high clearstory windows. It is intended that the platform end shall be occupied by an organ, for which Dr. Martin, organist of St. Paul's, has been asked to write a specification, and which will probably be one of the largest instruments in the City.

The principal elevation—that to Bishopsgate—is carried out in light yellow terra-cotta from the works of Messrs. Gibbs & Canning, at Tamworth, the modelled work having been executed by Mr. W. Aumonier. The two less-important fronts are of red bricks, with dressings of terra-cotta. The mosaic floors were laid by Messrs. Mainzer & Farrar, and the tiling to the walls of the corridors, &c., by Messrs. Maw & Co. The electric-lighting has been carried out by Mr. A. H. Wood, of Westminster, the fittings having been supplied by Messrs. Verity & Sons, of Covent Garden. The whole of the library stands, tables, chairs, and other fittings were made to special designs by Messrs. Lascelles & Co., of Bunhill-row.

On the failure of the contractor during the early part of the work, it was resumed by Messrs. John Mowlem & Co., Mr. T. Lee representing the Governors' interests as clerk-of-works. The architect is Mr. C. Harrison Townsend.

ST. PETER'S CHURCH, BUSHEY HEATH, HERTFORDSHIRE.

THE drawing from which our illustration is taken was exhibited in this year's Royal Academy Exhibition. It shows the new nave and tower to be built in connexion with the eastern portions of the church, which were illustrated and described by us a year ago. The pulpit (also exhibited in this year's Royal Academy) was illustrated in the *Builder* of April 21 last.

Messrs. Norris & Sons, of Sunningdale, are the contractors. The architect is Mr. James Neale, F.S.A., of London.

ST. JOHN'S, HENDON.

THE church is to be built in the Decorated style, and is to consist of nave and chancel under an unbroken roof, with north and south aisles extending nearly the whole length of the church.

The nave is to have a waggon roof, and the aisles are to be groined in wood.

The north chancel aisle will serve as a morning chapel, and the organ is to be placed in a chamber on the north side of the chapel.

The vestries are on the south side of the church, and these, as represented in the sketch, are to be connected with the vicarage by a cloister.

The building is to be faced externally with stock brick, with stone window tracery and dressings, and the roof to be covered with red tiles.

Mr. Temple L. Moore is the architect.

THE BUILDERS' BENEVOLENT INSTITUTION:

ANNUAL DINNER.

THE forty-seventh annual dinner in aid of the funds of this Institution was held on the 15th inst. at Carpenters' Hall, London Wall. Mr. Basil P. Ellis, the President of the Institution, occupied the chair, and was supported by Sir J. Whittaker Ellis, Bart., Mr. John Aird, M.P., Mr. Thomas Blashill, F.R.I.B.A., Mr. N. Smith (the Master of the Carpenters' Company), Mr. A. Lucas, Mr. F. J. Dove, Mr. J. Randall, Sir W. Pearson, Bart., Mr. B. E. Nightingale, Mr. H. H. Bartlett, Mr. Howard Colls, Mr. C. Bussell, Mr. J. T. Bolding, Mr. J. W. Duffield, Mr. T Stirling, Mr. W. Shepherd, and Mr. T. Hall.

The Chairman gave the toast of "Her Majesty the Queen, the Prince and Princess of Wales, and the rest of the Royal Family."

Sir J. Whittaker Ellis, Bart., gave "The Army, Navy, and Auxiliary Forces," Major Brutton responding for the Army and Navy, and Mr. J. T. Bolding (late Middlesex Yeomanry) for the Auxiliary Forces.

Sir W. Pearson, Bart., proposed "The Houses of Parliament," which was replied to by Mr. John Aird, M.P.

The Chairman, in proposing the toast of the evening, "Success to the Builders' Benevolent Institution," said it had now been established for nearly half a century, and there was no doubt that, during that long period, much good had been done by the charity. At the present time the Institution paid pensions to forty-eight persons, all of whom, in consequence of old age or infirmity, were unable to earn their own living. The Committee made very careful inquiries before placing anyone on the list for election, and went personally into all these matters. To enable the Committee to pay the pensions, an income of certainly not less than 2,000*l.* a year was required. The investments yielded about 650*l.* a year, which was a great help, but still it would be seen from these figures that a considerable part of the income was derived from annual

subscription and donations. It was generally admitted at the present time that the building trade was depressed, and for that reason, he was sorry to say, some portions of the income of the charity had fallen off; but he hoped, with the hearty assistance they had received from all quarters, and which he gratefully desired to acknowledge in the name of the committee, they would manage, notwithstanding their difficulties, to maintain the Institution on a thoroughly satisfactory financial basis. The charity was very carefully managed; they did not run into debt, and ask their friends to help them out of the difficulty, but they endeavoured to keep within their income. The trade of a master-builder was subject to even greater risks than most trades were. A great item to be considered in making a contract was the question of how much the labour was to cost. It was not generally difficult to state pretty nearly what the material would cost, but the labour was a very open question. He believed those who were his elders would admit that it was more difficult than it was twenty years ago to make an estimate as to what the labour would cost in any particular contract. There was all the more reason then why this Institution should be well supported. Builders might be well up to their work, but through circumstances over which they had no control, it happened from time to time that they lost a great deal of money, and in consequence of ill-health were not able to get up again. As in other trades, the elder men were gradually going out of business, and younger men coming in, and he hoped they would do all they could to get the younger men to subscribe to this Institution.

Mr. F. J. Dove, who replied, said he had been asked to do so in the regretted absence of Mr. G. Plucknett, one of the staunchest friends of the charity. Builders now-a-days were so keenly alive to cutting one another's throats, that it was a wonder they were not all applicants for the benefits of the Institution.

The President also gave the toast of "The Worshipful Company of Carpenters," to whom they were indebted for the use of the Hall in which they were met, and for their handsome donations to the funds.

The Master of the Carpenters' Company replied, and said that the Company took a great deal of interest in this Institution. The Company had been deprived of a great many of its old functions, but they were doing their best to promote technical education.

Mr. Howard Colls proposed "The President." The toast was very cordially received, and the chairman replied.

Mr. H. H. Bartlett gave "The Architects and Surveyors," and said that from remote antiquity architecture had been one continued progress onwards and upwards, and they could point to works of the present time as being fit to compare with those of the past. The duties of architects and surveyors should be kept separate. The builders were perfectly satisfied with the way in which the London surveyors conducted their work, holding the balance, as they did, between the architect and the builder.

Mr. Thomas Blashill, in replying for the architects, said that one very important point in connexion with the technical education of the young architect, as laid down by their Institute, was the way in which he should conduct himself towards the builder and his clients. He agreed that the duties of the surveyor were not such as should be undertaken by the architect.

Mr. H. Northcroft also replied. He said he felt that the quantity surveyors of London were getting into a better position year by year. He believed they were becoming recognised in a greater degree than before, and as the profession grew in importance London quantities would be used all through the kingdom, the London practice being undoubtedly the best.

Mr. Arthur Lucas proposed "The Vice-Presidents, Committee, and Stewards." He bore testimony to the good work done by those gentlemen, and to the exertions of Major Brutton, their energetic secretary. Mr. G. J. Lough replied to the toast.

In the course of the evening subscriptions and donations to the amount of 966*l.* were announced, of which 804*l.* appeared in the President's list. The President further announced that the members of his firm present had agreed to increase their subscriptions so as to make the total amount up to 1,000*l.*

APPOINTMENT.—We are informed that Mr. Albert N. Hawtrey, A.M.Inst.C.E. and Assistant-Surveyor to the Vestry of St. Pancras, has been appointed as Engineer and Surveyor to the Shoreditch Vestry.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday at the County Hall, Spring Gardens, Sir John Hutton, Chairman, presiding.

The Council and its Employés.—The Parks Committee brought up a report dealing with the question of the Council's servants working for other employers. The Committee stated that they had had before them the cases of certain gardeners in the employment of the Council working for private persons after their day's work for the Council was done. The matter was referred to a Sub-committee, which brought up a report recommending that a standing order should be made to the effect that every officer and workman in the employment of the Council would be expected to devote his whole time to the Council's service, and would not be allowed to take any private business orpaid employment. After carefully considering the matter, the Committee doubted the expediency of making such a standing order, and accordingly did not see its way to adopt the recommendation of the Sub-committee. The Committee therefore recommended the Council to concur in this view.

Mr. Crooks moved an amendment to the effect that every officer and workman in the employment of the Council should devote his whole time to its service, and should not be allowed to take any private business or paid employment, and that it be referred to the General Purposes Committee to prepare a standing order to that effect.

Mr. J. Stuart seconded the amendment, and after a long discussion it was carried by 51 against 28.

Mr. Arnold then moved that the words "and should not be allowed to take any private business or paid employment" be struck out.

This was seconded by Lord Welby, but was lost.

Mr. Orsman moved that after the word "employment" the following words be added "of the same character as that in which he is employed by the London County Council."

Lord Monkswell seconded the amendment, which was lost, upon a division, by 2.

Mr. Campbell moved, and Mr. Fletcher seconded, that the matter be referred back to the General Purposes Committee. This was also lost, and Mr. Crooks' amendment was then carried as a substantive motion.

Rebuilding of Vauxhall Bridge.—The adjourned report of the Parliamentary Committee contained the following paragraph, the recommendation being agreed to:—

"In pursuance of the resolution of the Council on March 16, 1894, we have prepared a Bill to be introduced in the Session of 1895, to authorise the rebuilding of Vauxhall Bridge. The provisions of the Bill, which have been approved by the Bridges Committee, are similar to those in the Bill previously introduced by the Council, and we have consequently not thought it necessary that a copy should be sent to each member of the Council. We recommend—

'That the London County Council (Vauxhall Bridge) Bill in the form in which it has been settled by us, be approved; that the seal of the Council be affixed to a petition for leave to bring in the Bill; and that the Bill and petition be deposited, pursuant to the standing orders of Parliament, with such verbal alterations (if any) in the Bill as the Parliamentary Committee may consider desirable.'"

Sanitary Staff of the District of St. Saviour's, Southwark.—The Report of the Public Control Committee contained the following paragraph:—

"The Mansion House Council on the Dwellings of the Poor having asked the Local Government Board to cause an inquiry to be made into the sanitary condition of the parishes of St. Saviour and Christchurch, Southwark, the Local Government Board suggested that the Mansion House Council should submit to the London County Council the particulars of cases in which they considered the St. Saviour's District Board had made default. The Mansion House Council thereupon, on March 30, 1892, communicated to the London County Council the particulars of certain cases in which in the opinion of the Mansion House Council the District Board had made default, and asked the London County Council to exercise the powers vested in it by sections 100 and 101 of the Public Health (London) Act, 1891. On receipt of this information we instructed the medical officer to report on the sanitary condition and administration of the district. A copy of his report, which was printed and circulated among the members of the Council, was sent to the St. Saviour's District Board with an intimation that we were strongly of opinion that under the circumstances mentioned in the report a larger number of sanitary inspectors should be appointed for the district. After further correspondence we are glad to be able to report that the Board has resolved to appoint an additional sanitary inspector in compliance with our desire, and also to appoinst another sanitary inspector in the place of Mr. S. Broadhead, who has resigned his position."

London Tramways.—Mr. Charles Harrison reported that the Parliamentary Committee have prepared a Bill to give effect to the resolution of the Council on July 31 last to apply for powers to work, should it be deemed necessary or expedient, any tramway which it may purchase under the provisions of the Tramways Act, 1870. The Committee have directed a copy of the Bill to be sent to each member of the Council, and they recommended: "That the London Tramways Bill, in the form in which it has been circulated, be approved; that the seal of the Council be affixed to a petition for leave to bring in the Bill; and that the Bill and petition be deposited, pursuant to the standing orders of Parliament, with such verbal alterations (if any) in the Bill as the Parliamentary Committee may consider desirable."

This was agreed to without comment.

The Unification Report.—A long debate then ensued on the adjourned report of the Special Committee on London Government, dealing with the Unification Report. At seven o'clock the debate was adjourned until next Tuesday.

The Council adjourned at 7.30 o'clock.

COMPETITIONS.

SCHOOLS, HARTLEPOOL.—The competition for a school for 250 boys and 250 girls, in Galley's Field, Hartlepool, has just been decided, with the result that the design submitted by Mr. J. M. Bottomley, 28, Albert-road, Middlesbrough, has been placed first.

ARCHITECTURAL SOCIETIES.

NORTHERN ARCHITECTURAL ASSOCIATION.—The opening meeting of the winter session of the Northern Architectural Association was held on the 14th inst., in the meeting-room of the Art Gallery, Newcastle. The President, Mr. Jos. Oswald, F.R.I.B.A., presided, and the following gentlemen were elected members of the Association:—Member: Mr. Henry Gibson. Associates: Messrs. Hy. C. Creighton and Alf. W. Sarsfield. Students: Messrs. K. Tasker, James F. Russell, and George Adams. The nominations for membership were:—Member: Mr. J. W. Hanson. Associates: Messrs. Harry Barnes, A.R.I.B.A., Sunderland; and John White, A.R.I.B.A. Students: Messrs. W. Shanks, F. R. Laverick, and G. W. Hayler. The President then delivered his inaugural address. He briefly referred to the age and strength of the Association, and the early work connected with it, and explained their relation with the R.I.B.A. He said the Architectural Alliance in name no longer existed, but its place was more than filled by that wider alliance which had been established between the Royal Institute of British Architects and various Societies of Architects throughout the kingdom, fifteen in number. This arrangement, comparatively of recent date, was destined without doubt to confer many benefits upon the provincial branches, and also upon the central Institute, and through them all upon the profession at large. Nine of the societies he had mentioned were represented upon the governing and deliberative body of the Royal Institute in London, in the persons of their Presidents. That Association had the good fortune to be one of the nine so represented, and he had, therefore, the honour, on their behalf, of a seat at the Council Board of the R.I.B.A.

EDINBURGH ARCHITECTURAL ASSOCIATION.—The Session of the Edinburgh Architectural Association was inaugurated on the 14th inst. by a conversazione held in the Royal Institution. After tea, the President, Mr. W. W. Robertson, delivered an inaugural address. He called attention to an exhibition of fine old engravings of Edinburgh, and especially of Edinburgh Castle, which had been made by the late Mr. William Nelson. Passing on, he said his attention had been drawn to the recent addition to the Advocates' Library of the manuscript journal of James Playfair, extending over the period from 1783 to 1793. He had read the journal, and found it to be a plain business record of journeys taken, work done, and accounts rendered. A good deal was disclosed that was interesting, glimpses of the habits, the life, and the work of the time, but not, on the surface at least, very much of the man. He explained that James Playfair was the father of their William Henry Playfair, and the brother of that Playfair who had been Professor of Natural

Philosophy in the University of Edinburgh. To them he was interesting as the father of the distinguished architect of Donaldson's Hospital, of the building in which they were then assembled, and of many others which ornamented the city. He was a Scotsman who had migrated to London and established himself as an architect in Russell-square. Mr. Robertson then quoted freely from the journal, beginning with business entries. Perhaps to them the most interesting part of the journal was the mention of Playfair's journeys to Scotland every year. In successive visits the same names appeared and reappeared — Dalkeith Palace, Melville Castle, Bothwell Castle, and others. At the close of his address Mr. Robertson was, on the motion of Mr. Balfour Paul, accorded a very hearty vote of thanks. Thereafter, there was an exhibition of lantern pictures, illustrating examples of the Mediæval architecture of France and Britain.

ARCHITECTURAL SECTION, GLASGOW PHILOSOPHICAL SOCIETY.—The opening meeting of the Session of the Glasgow Philosophical Society was held on Monday, when Mr. T. L. Watson, F.R.I.B.A., delivered a lecture on "Glimpses of Four Great Periods of Italian Art." The four periods referred to were:—(1) That of ancient Rome; (2) the Byzantine period; (3) the Middle Ages; and (4) the Renaissance. The lecturer dealt chiefly with the art of the Middle Ages, and pointed out some of the varieties of Gothic architecture that prevailed in the different divisions of the country. The influence of the Classical art of antiquity was felt throughout the whole Gothic period, and was seen in the general effect of breadth, in the horizontal treatment and the flat surfaces as opposed to the vertical treatment and the deeply-recessed openings and mouldings of Northern Gothic. It was seen again in the fondness for the single round pillar or shaft, often tapered, instead of the clustered pillar. It was particularly observable in the sculpture both of foliage and of the human figure, and in the use of round arches along with pointed ones. There was a certain defect of the constructive sense seen in the apparent overloading of slender pillars, as well as in the prevalence of iron tie-rods to maintain the arches. A third characteristic was the great wealth of colour produced by various marbles, brick and terra-cotta, and by mosaics and fresco paintings. Many of the painters were architects also, and even those who were not showed an intimate knowledge of architecture. The paintings were really allied to the buildings, and not merely applied. The architecture painted as accessory to the figures was in harmony with the lines of the building, and the figure-subjects also had the architectural qualities of symmetry, restraint, and repose. The architecture, painting, and sculpture of the Renaissance were then touched upon, and the same qualities were illustrated up to the middle of the sixteenth century, after which there was rapid deterioration. In the course of the lecture limelight views were shown, among others being works of the Pisanos, the Della Robbia's, Donatello, Ghiberti, and Della Quercia in sculpture; and Giotto, Fra Angelico, Benozzo Gozzoli, Filippo Lippi, Ghirlandajo, Raphael, and Andrea del Sarto in painting, as well as many buildings and architectural details.

GLASGOW ARCHITECTURAL ASSOCIATION.—The third lecture of the winter series of this Association was delivered on Tuesday evening, in the rooms, 114, West Campbell-street, by Mr. James Chalmers, I.A., the subject being "Egyptian Art." Mr. W. Tait Conner, A.R.I.B.A., occupied the chair. After some introductory remarks dealing with the historical and geographical side of the subject, the lecturer spoke at some length of the nature of the materials employed by the ancient Egyptians, and explained the various theories held by authorities as to the methods of quarrying and transport of the huge blocks of stone. Views were shown by limelight of many notable ancient buildings, the lecturer describing in detail the chief points of interest.

LEEDS AND YORKSHIRE ARCHITECTURAL SOCIETY.—On the 12th inst., at the opening meeting of the present session of the Leeds and Yorkshire Architectural Society, Mr. E. J. Dodgshun delivered the Presidential address. We may be able to devote some space to the President's remarks in our next issue.

ENGINEERING SOCIETIES.

INSTITUTION OF CIVIL ENGINEERS.—At the ordinary meeting of this Institution on the 20th inst., Sir Robert Rawlinson, K.C.B., the President, in the chair, the paper read was on "The Machinery of War-Ships," by Mr. Albert J. Durston, Engineer-in-Chief of the Navy.

CIVIL AND MECHANICAL ENGINEERS' SOCIETY.—The Civil and Mechanical Engineers' Society visited, on the 15th inst., the works of Messrs. Bullivant & Co., in the Isle of Dogs, where the processes of making steel wire cables and ropes, torpedo-catching nets, and wire-netting is carried on. The members of the society were taken over the works by one of the partners; they were shown every detail of the manufactures, from the testing of the wires before they are made up into ropes, to the testing of a finished heavy cable. The various machines in the cable-shop were carefully explained, as was also the process of galvanising the wires. A hearty vote of thanks was given to Messrs. Bullivant & Co. Among those present were:—The President, T. C. Walrond, C.E., the Hon. Sec., E. H. G. Brewster, C.E., M.Inst.M.E., the Treasurer, A. A. Myall, C.E., A. Wollheim, C.E., C. J. Brown, C.E., W. C. Penn, A.M.Inst.M.E., H. Coward, C.E., A. K. Stothert, A. H. Anderson, H. A. Monsfield.

Correspondence.

To the Editor of THE BUILDER.

CONTINENTAL SANITATION.

SIR,—The yearly-increasing number of English tourists that now pass through or make a sojourn at Dieppe—especially during the summer months—will, I feel assured, be glad to know that every attention is being paid by the municipal authorities there to questions connected with sanitary improvement.

I have before me a very interesting and able report, recently issued, from the pen of an eminent *avoué*, deputy mayor and sanitarian, who has been decorated for his services to the public health, Monsieur Coche, a report which treats of the operations of a local "*Commission*" that has been sitting since 1892 at Dieppe, to inquire into and report upon the subject of insanitary dwellings. The "*Commission*," of which M. Coche is the chairman, and which has been constituted in the usual French way—*i.e.*, half composed of experts, the other half of representative citizens—has acted in co-operation with the "Comité Consultatif d'Hygiène Publique de France," a body called into being by a decree of the Second Republic (1848) and on which sit such men as Professor Brouardel, Drs. Du Mesnil and Proust, whose guidance and energetic initiative have enabled the Dieppe "*Commission*" to undertake work of a more specific character than that previously attempted by them. The report shows that, out of the cases dealt with, 45 per cent. have been satisfactorily disposed of, and that the remainder are in process of being carried out, whilst in six cases only has it been necessary to have recourse to the powers of the Municipal Authority.

M. Coche goes on to touch, with commendable precision, on the difficulties arising from the 1850 law—difficulties of a character so familiar to all of us in this country who have had any experience on Sanitary Boards and otherwise. But it is gratifying to learn that, on the whole, both owners and occupiers have in many cases quickly responded to the wishes of the "*Commission*," and recognised that that body were acting in the best interests of the community generally. M. Coche concludes by making certain recommendations for the amendment of the 1850 *loi*, and boldly proposes that "the civil tribunals should, throughout France, be substituted for the Councils of Préfecture, so as to secure to municipalities like their own the advantage of utilising the provisions of the Summary Procedure Code." He also suggests that such "*Commissions*" should be authorised to make compulsory and periodical inspections ("*visites*"), a fact which shows how far England has progressed beyond her Continental neighbours—a fact, too, generously admitted by M. Coche in a letter from him I have just received since my return from a lengthened stay in the Seine-Inférieure Departement. He says:—

"It is a real pleasure to me to forward you copy of my recent report, addressed to the Comité Consultatif d'Hygiène Publique de France, on the labours of my "*Commission*" in respect of such insanitary dwellings as still exist in Dieppe. I have thrown myself into this work—a work I admit not very widely taken up, as one reaps from it but little gratitude for one's pains—believing, however, as I do, that in the future it will yield substantial results, as well from the point of view of hygiene—*i.e.*, a healthy life—as, what I think more important, on moral grounds. As to the former point of view, the best scientific opinion of the day leaves us in no possible doubt as to the right course of action to pursue—and here I am bound to say that you in England are in advance of us by a generation—whilst, with reference to the other consideration—the moral standpoint—there can equally be no question that the worker or the citizen in any capacity who shows a predilection for and acquires a clean and healthy home becomes *ipso facto* a better man.

It is the results obtained in your country, with a rate of mortality as low in some districts as 11 per thousand, which—I will not conceal from you—originally induced me to apply myself to the serious study of these hygienic questions, and especially with a view to diminishing the preventible diseases to which children so readily fall a prey.

We have at present in France only seven towns where a "*Commission*" similar to the one in operation here is to be found; and we have every reason to be confident that under the guiding hand of the *Comité Consultatif* to which I have referred, a very material progress will before long manifest itself. Eminent men such as Docteurs Brouardel, du Mesnil, and Proust, are devoting their best talents and their zeal for the public welfare to the work; and our town of Dieppe in particular is proud of the position to which it has admittedly attained, of being in the vanguard of the movement."

The above letter, coming from one so intimately associated with an important municipality like that of Dieppe, may perhaps convince some who are a litttle impatient at the slow progress which is being made on the Continent towards the realisation of our high sanitary ideals, that the matter is not being lost sight of by foreign sanitarians—even if due allowance is made, as I submit it should be, for varying methods of canalisation, and different modes of life that obtain abroad. CHARLES HANCOCK.

THE WARMING OF THE NATIONAL GALLERY.

SIR,—May I be permitted to make a suggestion in regard to recent correspondence in some of the daily papers as to the deterioration of those of the National Gallery pictures in which asphaltum has been used? As to these it is stated that the opinion of scientific chemists is, "all hope is vain, nothing can save them."

The complaint of this impairment appears to be of comparatively modern origin, and not made prior to the introduction into the galleries of the modern scientific system of warming by hot-water pipes or other method of air-heating.

It is agreed that the damage is the result of excessive dryness of the air, caused by the system of warming, which dryness cannot be effectively ameliorated by the usual antidote of water-troughs. These troughs, says Sir Charles Robinson, have been tried at Buckingham Palace and have failed; "the Wilkies so treated there, ran all the same."

It is a difficult and slow process to raise the temperature of air by radiated heat. The warming of air by hot-water or steam pipes is effected much more rapidly by convection. The dryness of air, as we usually speak of it, is not a question of its actual hygrometrical condition, not the actual amount of water-vapour contained in it, but rather of its capacity to absorb more water. The capacity of air to absorb water depends largely on, and increases with, its temperature. Air may be effectively dried by extracting its heat, yet it may not be dry in the colloquial sense, because, while remaining at the lower temperature, it is not capable of drying up or absorbing moisture. On the other hand, when air is warmed it is not necessarily made really drier; it loses none of its moisture, but becomes capable of absorbing yet more moisture, and so has the capacity of drying objects in contact with it.

Applying these well-known facts to the pictures, it is apparent that they are subjected to the drying effect of warmed air. The remedy appears to me to consist in reverting to warming by radiation only, by which the air would remain cool, with less capacity for drying the pictures, and, at the same time, would be healthier to breathe. The necessary warmth for the comfort of visitors could be obtained directly by radiation, as from an open fire in ordinary dwellings, where nothing is more pleasant than a good fire in a room recently thoroughly flushed out with cold air.

I presume that at one time the galleries were warmed, if warmed at all, by open fires. If so, it would be useful to inquire whether the same cause of complaint existed then. Be that as it may, it is quite certain that open fires are not to be thought of now. The risk of a conflagration and the large amount of dust which they cause, would effectually bar their use. But why could not hot-water or steam radiators of sufficient area be applied (not necessarily in the form of pipes) so that the heat should be radiated into the room, whilst that portion of the air which would be heated by contact with the radiators should be immediately removed by flues? This would give the same beneficial result as warming by open fires, viz., comfort to the bodies of the visitors and cool air with but little capacity for absorbing moisture (low drying power)

for the benefit of the pictures and the health of the visitors.

There must be many places in the country where asphaltum pictures have been preserved, and where no hot-water warming has been used. It would be interesting to make adequate inquiry, and to compare the state of the paintings in these places with those in the National Gallery.

ARTHUR HARSTON.

OLD IRON-WORK IN BOW CHURCH.

SIR,—In the crypt of Bow Church, Cheapside, there lies neglected and rusting a quantity of fine seventeenth-century iron-work, amongst which I have noticed:—

(1.) A tall and elaborate wrought-iron hat-stand, in character not unlike the mace-stands still common in the City churches.

(2.) The iron railings formerly enclosing one of the monuments in the church.

(3.) An elegant and slightly-elaborated iron corona chandelier, formerly hanging in the ringing chamber.

(4.) Miscellaneous iron-work, the original use of which I was not at a glance able to determine.

This iron-work, most of which seems to be contemporary with the church, is now suffering severely from damp, and will, in a few years, probably become entirely ruined.

The original font designed by Wren, and charmingly wrought in marble, has been bestowed in another corner of the crypt and is in good condition, though it lies in a place where it must frequently be liable to accident. The font-cover belonging to it is now in the vestry. At the "restoration" effected some years ago this font and its cover, hallowed by long use, were mercilessly removed, and a new stone font with "Mediæval" brass and wood cover substituted.

The upper part of the reredos, a pediment with candelabra, was at the same time taken away to show the glass in the east window, and is, I am told, still in existence.

The marble and stone pavement which was then replaced with "tesselated tiles" now lies in the crypt.

Surely most of these interesting and original fittings of Wren's fine church might be replaced in their proper positions, or at least the ironwork might be cleaned of rust, painted, and kept in a dry place.

If this were impossible, it would even seem better that they should be removed to some other church or to some museum, where, at any rate, they would be appreciated and cared for, than that they should be left much longer to rot where they now are.

C. A. N.

WOOD-PAVING IN STREETS.

SIR,—Your notice of the Report upon the relative merits of cement and pitch for filling the interstices leads me to ask if any such report has been made with reference to the carbolineum, which, so far as my own experience goes, would be much preferable to either. It is of a wonderfully *penetrating* nature, and, although it is best to apply it to a dry material, the wet will not affect it when applied, and, being antiseptic, it has great preservative properties. I believe it has been applied to this purpose, but I do not know if any result of it has been published.

WILLIAM WHITE, F.S.A.

WORKS BY THE LONDON COUNTY COUNCIL.

SIR,—With reference to your report of the proceedings at the County Council and statement of cost of works executed by the Works Department, it would be interesting to know whether the amounts therein given include the expenses of the following matters:—

1. Cost of drawings.
2. Cost of quantities.
3. Cost of first estimate by Architectural Department.
4. Cost of second estimate by Works Department.
5. Cost of measuring variations.
6. Cost of superintendence by the Works Department.
7. Cost of Plant.

M.

THE EDUCATION OF WORKING MEN.

SIR,—I see in your last issue a list of the organisations from which deputies are invited to a conference on the above subject, a most laudable one, and which should be as representative as possible; but why are the "Clerks of Works Association," the "Builders' Foremen and Clerks of Works Society," and the "Free Labour Society," left out from the list of those invited? Surely the members of the former associations would add a great deal of interest to the conference, as I consider no one comes more in direct contact with the workman, and can better discriminate between good and bad workmanship, and give the cause of either, than the clerk of works or foreman. For the conference to be a success the basis should be as wide and unrestricted as possible.

A GENERAL FOREMAN.

*** We quite agree with our correspondent.—ED.

The Student's Column.

DETAILS OF RURAL WATER SUPPLY.—XXI.

WATERWORKS REGULATIONS.

IN accordance with the provisions of the Metropolis Water Act, 1871, a code of Regulations was compiled by the Metropolitan Waterworks Companies and submitted to the Board of Trade.

These suggested Regulations were subjected to an exhaustive inquiry, and, as finally settled, have been circulated by the Local Government Board for the information of Local Authorities who have obtained the necessary powers, and are preparing to submit Regulations for confirmation. As it is customary for Local Authorities supplying water, and acting only under the provisions of the Public Health Acts, to issue a code of Waterworks Regulations, trusting to their moral suasion and to the popular ignorance of the law for their efficacy (a trust by no means unfounded), a brief commentary upon the Regulations under the Metropolis Water Act, 1871, is given here. These Regulations are by no means perfect, or are they fitted for all cases. In adapting them for use in rural districts, latitude must be given to many of the provisions, care being taken that the main principles involved are not lost sight of.

No. 1 Gives the company power to determine the point at which the communication-pipe shall enter the premises to be supplied.

No. 2 Requires that all lead pipes in direct communication with the company's system shall be uniform in thickness, and fixes the strengths—the weight being taken as the guide.

Internal Diameter in Inches.	Weight in Lbs. Per Yard.	Weight in Lbs. Per Foot.	Thickness in Inches.	Safe Head of Water in Feet.
$\frac{3}{8}$ = ·375	5	1·67	·1902 = $\frac{3}{16}$	622
$\frac{1}{2}$ = ·5	6	2·0	·1873 = $\frac{3}{16}$	460
$\frac{5}{8}$ = ·625	7½	2·5	·196 = $\frac{3}{16}$	385
$\frac{3}{4}$ = ·75	9	3·0	·202 = $\frac{3}{16}$	330
1 = 1·0	12	4·0	·212 = $\frac{3}{16}$	260
1¼ = 1·25	16	5·3	·230 = $\frac{1}{4}$	226

The weight is calculated on a basis of 712 lbs. to the cubic foot, and the strength upon a mean ultimate cohesion of 2,000 lbs. per square inch, allowing a factor of safety of 7½.

The weights adopted by various water companies, as might be expected, vary considerably, on account of the different pressures to which the pipes will be subjected.

The following are the weights, per lineal yard, required by various companies:—

Name of Company.	Internal Diameter of Pipes in Inches. Weight per Lineal Yard in Lbs.					
	⅜	½	⅝	¾	1	1¼
London Companies	5	6	7½	9	12	16
Kent	—	5	7	9	12	—
West Surrey.....	4	5½	—	9	14	20
Caterham	5	6	8	10	14	—
Colne Valley.....	5	7	9	11	16	—
Sevenoaks and Tonbridge..	—	5	7	9	12	15
Norwich.....	5	7	9	11	16	22½
Sheffield	5	7	9	11	16	22½
Market Harborough	5	6	7½	11	16	20
Glasgow (Loch Katrine) ..	—	7	—	10	14	18

No. 3 Allows the consumer the option of lead, copper, or wrought-iron for internal pipes, except when in contact with the ground, when the company may insist on lead being used.

No. 4 Limits the consumer to one communication-pipe. This is an important regulation.

No. 5 Requires each house supplied by the company to have its own communication-pipe, except in the case of a block of buildings belonging to one owner, who pays the water-rates for them.

It frequently happens in rural districts that the undertakers are asked to allow a communication-pipe to a property to be tapped for the benefit of another property (the respective owners having agreed between themselves). This should never be permitted.

No. 6 Prohibits any communication between the pipes or fittings of any two premises, except in the case provided for in the last Regulation.

No. 7 Provides that the connexion of the communication-pipe with the company's pipes shall be made by the company at the cost of the consumer, the connexion to be made by means of a "sound and suitable brass screwed ferrule or stop-cock with union," having a clear waterway of no less than that of a ½-in. pipe.

No. 8 Requires that every pipe external to the house, including the portions of pipes laid in external walls, shall be of lead; the joints to be "plumbing" or "wiped" joints.

No. 9 Guards against possible pollution to the water in the consumer's pipes, and thence to the water in the company's pipes, from the consumer's pipes being "laid or fixed through, in, or into" any drain, ashpit, &c. Where such drain, ashpit, &c., is in the unavoidable course of the pipe, the pipe must be protected by passing it through a cast-iron pipe or jacket of sufficient length and strength and of proper construction. When the water is turned off from any part of the system a partial vacuum is formed, and any liquid matter in proximity to a faulty pipe or leaking joint would be sucked into the pipe, and might be the cause of dissemination of disease throughout the whole system.

No. 10 Requires that all pipes laid in open ground shall be laid at a depth of at least 2 ft. 6 in. below the surface, and provides for proper protection against frost in exposed situations. A depth of 2 ft. is frequently inserted in waterworks regulations, which is probably ample in this country.

No. 11 Prohibits any communication between the pipes and any receptacles for rain-water.

No. 12 Provides for the insertion of a "sound and suitable screw-down stop-valve," either at or near the point of entrance of the communication-pipe into the premises, or within the premises, at the option of the consumer. If placed in the ground, such stop-valve to be protected with a proper cover and guard-box.

For the reasons stated in Chap. XX., it is better to have the stop-cock fixed outside, so as to be under the immediate control of the undertakers. The principal objection, from the consumers' point of view, is that it is less accessible in case of burst pipes, or other accidents, and entails the use of a loose key, which is liable to be mislaid.

No. 13 Deals with cisterns, requiring that they shall be made water-tight, properly covered, placed in such a position that they can be easily inspected and cleansed, and that each cistern shall be provided with a sound and suitable "ball-tap" of the valve kind.

It is evident that if a cistern which is filled automatically is unsound, the waste of water must be constant. The provisions as to covering and cleansing allude to the possibility of pollution in a similar manner to that explained in connexion with Reg. No. 9.

No. 14 Prohibits the use of overflow or waste-pipes other than "warning-pipes," to cisterns; and

No. 15 Requires that all "warning-pipes" shall discharge at such a point that any flow may be readily ascertained by the officers of the company. The position of such "warning-pipes" not to be altered without due notice to and the approval of the company.

These regulations are o the greatest importance, and should be strictly enforced. The old practice of allowing overflow pipes to empty directly into the drains was a prolific source of waste. In the case of the ball-tap being out of order, the waste might continue for months before being detected. With a "warning-pipe,' which consists of a short pipe passing directly through the wall into the air, with an open mouth, the case is different; any waste is speedily detected, and the inconvenience caused by a constant stream of water flowing down the face of the wall of the house, causes the occupier to take prompt steps to remedy the defect.

No. 16 Prohibits the use of buried or excavated cisterns. Waste from such cisterns would not only be non-apparent, but would be difficult of detection.

No. 17 Forbids the use of wooden receptacles not having proper metallic linings, *e.g.*, water-butts. This regulation has the double object of preventing waste and avoiding pollution.

No. 18 Requires the use of sound and suitable draw-taps, which must be of the "screw-down" kind.

Draw-taps are divided into two classes, "plug-taps" and "screw-down" taps. In plug-taps, the spindle or plug simply revolves in the tap, without rising or falling; a horizontal hole through the plug being made to connect or disconnect the inlet and the outlet to the tap by revolving the plug. This form of tap has no washer. The objections to the plug-tap are two-fold, the most important being the sudden check which is given to the momentum of the body of water behind it, when the tap is closed. An illustration of the enormous strain upon a system caused by the use

of plug-taps is attributed to Mr. A. R. Binnie (the *Builder*, July 7, 1894, p. 3). In this experiment the pressure on a ¾-in. pipe, 114 ft. long, and branching off a supply main and furnished at the end with a plug-cock, measuring 0·152 of an inch, was at the branch 120 lbs., and at the open cock itself 20 lbs. On the cock being shut quickly, those pressures were for the moment found increased to 220 lbs. at the branch and 550 lbs. at the cock. The second objection to the plug-tap is its liability to leak, on account of the rapid wear, necessitating the plug being ground, which can only be done by a mechanic.

"Screw-down" taps (fig. 52, Chap. XX.) have a screwed spindle, at the lower end of which is a washer, which when forced against its seat by turning the spindle closes the inlet to the tap. When a tap of this kind commences leaking, the old washer should be removed and a new one put in its place. This process is very simple and inexpensive, and can be performed by any intelligent person. The washers consist of leather, except for hot water, when vegetable fibre should be used. A tap, invented by Lord Kelvin, has been introduced within the last few years, in which the washer is constructed of gun-metal, and revolves upon its seat. In its earlier form it was not found to work satisfactorily under high pressure, but it has recently been much improved.

No. 19 Refers to taps for "stand-pipes," and requires that they shall be of the "waste-preventer" kind, and be protected from injury by frost, theft, or mischief. With low-pressures automatically closing taps may be employed, but under high pressures they are rarely free from leakage. They are, in nearly all cases, open to the same objections as plug-taps.

No. 20 Requires boilers, urinals, and water-closets to be served only through a cistern or service-box, and forbids the use of stool-cocks, or any direct communication between the company's pipes and such apparatus.

No. 21 Requires the cistern supplying a "water-closet" to be fitted with a "waste-preventing" apparatus, capable of discharging not more than two gallons at each flush.

The desirability of altering this regulation being brought before the Local Government Board by several of the Metropolitan Sanitary Authorities, the matter was referred to the London County Council, who again applied to the Sanitary Institute for an opinion upon the subject. After much consideration and experiment, the Sanitary Institute reported as follows:—"That Clause 21 of the Regulations under the Metropolis Water Act, 1871, should be altered to read—'So constructed as to discharge not less than three nor more than three and a-half gallons of water at each flush.'" The Local Government Board has, however, pointed out that such a recommendation was not within the purport of the Regulations referred to, which have for their object the prevention of waste, misuse, or contamination of water. The London County Council have agreed to make application to the water companies to amend the Regulations in the direction desired.

An unnecessary use of water is caused when water-closets adapted for use as urinals are fitted with waste-preventing cisterns discharging 2 gals. of water at each flush. For the latter use a much smaller flush would suffice, but there is no means of reducing the flush on such occasions.

No. 22 Is similar to the last, and refers to urinals, but fixes the maximum flush at 2 gals. instead of 1 gal.

No. 23 Requires the "down-pipe" of a closet to have an internal diameter of not less than 1¼ in., and if of lead to weigh not less than 9 lbs. to every lineal yard. The object of this, and Regulation 29, from the Company's point of view is not obvious.

No. 24 Forbids any communication between the pipes supplying the Company's water and any part of a water-closet, or any apparatus connected therewith, except the service-cistern.

No. 25 Prohibits the existence of any overflow pipe to a bath, unless it be constructed as a "warning-pipe." The remarks made in connexion with Regulations 14 and 15 apply to this regulation, but to a modified extent.

No. 26 Requires that the inlet shall be distinct from, and unconnected with, the outlet of a bath; that the inlet shall be above the highest water-level of the bath; and that the outlet shall be provided with a perfectly water-tight plug, valve, or cock. These requirements aim at the abolition of baths having a combined inlet, outlet, waste, and overflow (the last being, however, prohibited by Regulation 25), at the bottom. These arrangements are very liable to get out of order, and water might easily escape directly into the drain without ever being noticed.

No. 27 Requires that no alteration shall be made in any fittings in connexion with the supply of water without two days' previous notice in writing to the company. Compare Waterworks Clauses Act, 1863, Sec. 19.

No. 28 Is for the protection of the consumer, where the communication-pipe is laid by the undertakers, and sets forth that no cock, ferrule, joint, union, valve, or other fitting, in the course of any "communication-pipe" shall have a less water-way than that of the "communication-pipe."

No. 29 Requires that all "warning-pipes" and other lead pipes of which the ends are open, so that such pipes cannot remain charged with water, may be of the following minimum weights:

Internal Diameter in Inches.	Weight per Yard in Lbs.
½	3
¾	5
1	7

No. 30 Defines "communication-pipe" as being the pipe which extends from the district-pipe or other supply-pipe of the company up to the "stop-valve" prescribed in Regulation 12.

No. 31 Imposes a penalty of 5*l.* on any person contravening these Regulations.

No. 32 Empowers an authorised officer to act for the company.

No. 33 States that all existing fittings approved by the company shall be deemed to be prescribed fittings under the "Metropolis Water Act, 1871."

GENERAL BUILDING NEWS.

Additions to Usk Priory, Mon.—The interesting old house known as the Priory, Usk, has just been considerably enlarged by the addition of a new wing comprising a large smoking-room, with garden entrance, servants' hall, and staircase on the ground-floor, and additional bedrooms and bath-room on the first-floor. The new buildings are Domestic Gothic in the Tudor style, stone-built, and the roof is covered with stone shingles, obtained from old roofs; the dressings are in St. Aldhelm Box Ground Stone. The smoking-room ceiling is boarded in oak and divided into panels with heavily-moulded ribs; an oak-panelled dado with moulded skirting and capping is run around the room, and there is a large bay-window, also ceiled and panelled in oak; the whole of the joinery in this room is in oak, as well as the floor, and the fireplace is in character lined with Godwin's (Lugwardine) tiles, having a red Forest Stone moulded margin and arch, and a large panelled, moulded and carved oak mantelpiece. The curious old corridor has also been restored, the "whitewash" cleaned off the old oak beams, the ceiling and dado lined with oak; an oak screen put in between the entrance-hall and corridor, and the windows reglazed with lead-lights of appropriate character. The whole of the works, including all the oak woodwork, have been carried out by Messrs. Knox & Wells, contractors, Cardiff, from the designs and under the superintendence of the architects, Messrs. Veall & Sant, of Cardiff, who have supplied full-size details for all stonework and joinery. The lead-lights and casements throughout have been supplied by Mr. S. Evans, West Smethwick; the ornamental door-furniture and ironmongery by Messrs. T. Brawn & Co., Birmingham; the tiles by Messrs. Godwin & Sons, of Lugwardine Works, Hereford; the grates and electric-bells by Messrs. John Williams & Sons, of Cardiff; and the carving, both of stone and oak, has been executed by Mr. W. H. Wormleighton, also of Cardiff.

Catholic Church, Dunfermline.—On the 16th inst., the corner-stone of St. Margaret's Memorial Church, which is being erected by the Catholics of Scotland in Dunfermline, was laid. The church is from plans by Dr. Rowand Anderson, Edinburgh. According to the *Glasgow Herald*, the plan is cruciform, the greatest length being 194 ft., and the extreme breadth at the transepts 75 ft. The nave has five bays, with two aisles, and the choir has three bays, two of which open into side chapels. The tower at the transept crossing is finished internally with a dome, arcaded above the arches. The entrance-porch, 24 ft. square internally, is finished with a groined roof. A double door, with archway deeply recessed, gives access from the porch to the nave, aud in the recesses provision is made for statuary. It is intended to decorate the apse and the dome of the transept with mosaics, and in the apse and transepts the floors will be laid with marble and tiles. Immediately below the dome will be the baldachino, which will probably be executed in rich stone or marble. Over the entrance to the nave it is intended to have the choir, and provision is made for an organ over the east chapel in the choir. The exterior view shows a building of the Transitional style of the twelfth century, built with natural-faced rubble from various quarries. The nave shows a series of five circular-headed windows in the clearstory, alternating with buttresses of hewn stone, corresponding with the interior bays. The porch shows an open doorway, flanked by strong turreted angle-buttresses. It is 25 ft. high, by 15 in breadth, the sides showing clustered shafts and mouldings. Entered from the porch on the left, or west side, is the circular bell-tower. It fills the recess between the nave and the porch, has a diameter of 28 ft., tapering slightly to the top, and is 174 ft. high. It is in three stages. The lower stage is used as a baptistry, and externally shows a range of windows alternating with eight buttresses, which terminate in symbolical figures. Above this, for 105 ft., the main body of the tower is plain; and the upper part, which is arcaded in two stages supported on a band of sculptured figures, is open, and is to be used as a belfry. The tower is finished with a conical stone roof. In the meantime it is not intended to complete the church beyond the nave; but the total cost when the building is finished will probably not be short of 30,000*l.*

Primitive Methodist Chapel, Coventry.—The memorial-stones were laid recently of a new Primitive Methodist Chapel in Ford-street, Coventry. The new chapel will consist of a nave, chancel, and transepts. The internal dimensions will be as follows:—Nave 51 ft. long by 31 ft. 6 in. wide, and 35 ft. 6 in. wide at the transepts. The chancel will be 12 ft. by 9 ft. There will also be an organ-chamber 10 ft. by 8 ft. Provision will be made for the choir in the chancel. The chapel will seat 260 adults, or a mixed congregation of 340 persons. Underneath will be the assembly-room and five class-rooms, affording accommodation for 300 scholars. The architect is Mr. John Wills, of Derby, and the builder is W. J. Worwood, of Coventry.

Schools, Northampton.—The opening of an enlargement of St. James' End Schools, Northampton, took place recently. The works of enlargement have been carried out by the contractor, Mr. William Heap, the architect being Mr. M. H. Holding, of Northampton.

Town Hall, Dalbeattie, Kirkcudbright.—On the 16th inst. Dalbeattie Town Hall was opened by Mr. W. J. Maxwell, M.P. for Dumfriesshire. Additional ante-rooms have been added and a lesser hall provided downstairs. The hall will be capable of accommodating about 400 people. Mr. A. B. Crombie, Dumfries, was the architect.

Bishopsgate Institute.—To-day (Saturday), the Earl of Rosebery, K.G., will open the Bishopsgate Institute, Bishopsgate Without, illustrations of which we give this week. A full description of the building will be found on page 374, but we may here mention that the gas-fittings throughout the building have been supplied by Messrs. Sugg & Co., of Westminster.

All Saints' Church, Buxton-street, E.—This church has just been re-opened by the Bishop of London. The upper part of the tower was condemned last year by the London County Council, and the vicar, the Rev. J. Basil Rust, having collected funds, the decayed part of the tower was taken down, and the work of reconstruction commenced in May. An arcaded parapet of Portland stone, supported by moulded corbels, has been added to the tower, above which is a lofty belfry with coped and gabled roof, and louvred windows of two lights under comprising arches, the eastern gable terminating with an ornamental wrought-iron cross, and dormer windows with louvres are built on each side of roof. The walls of the church have been re-pointed, and the gables of nave and chancel have new copings and crosses of Portland stone. The nave-roof has been boarded and reslated, and a mosaic pavement laid in the porch. The large nave has been panelled to the height of the window-sills, and a low stone screen now divides the nave from the chancel. There are seven steps to the chancel in place of three, and the floor is paved with encaustic tiles, supplied by Messrs. Godwin, of Lugwardine, and high traceried oak screens are erected behind the stalls. The organ has been enclosed by a similar screen, a morning chapel formed at the south-east end of nave, and the walls and roof decorated throughout. The work has been executed from designs by Mr. John Medland, of London, the contractors being Messrs. Harris & Wardop, of Limehurst. The oak screens were made by Mr. Wilson, of Hampstead-road.

Additions to the Staffordshire General Infirmary.—The Staffordshire General Infirmary is being enlarged by the construction of a new south wing and children's ward, from the designs of Mr. Aston Webb. The floors are fireproof throughout on the Fawcett system.

STAINED GLASS AND DECORATION.

Decoration of St. John's Church, Egremont, Cheshire.—The church of St. John's, Egremont, was recently opened after being decorated in the Byzantine style, the work having been carried out by Messrs. G. H. Morton & Son, of Liverpool, and Mr. Van Bel, their chief artist. In the sanctuary, the basis of the decoration is the idea of resurrection. On the roof our Lord is depicted as seated in Glory upon a rainbow, surrounded by the Archangels Saint Michael, Saint Uriel, Saint Gabriel, and Saint

Raphael. The whole is surrounded by a vesica in the form of clouds. The upper part of the wall from the window to cornice has a ground colour of greeny-buff, and above the reredos are painted three medallions, formed by silver bands or frames with red and blue ornamentation. The centre medallion contains the Lamb of God on the seven-sealed book, resting on a coloured altar, and the other two are treated emblematical of the resurrection—*i.e.*, a phœnix arising from its ashes, the remaining space being filled with arabesque ornamentation in brown, blue, gold, and silver. On the right of the sanctuary above the window is painted on a gold ground the figure of St. Hilary of Poictiers, the patron saint of Wallasey, and on the left in a corresponding position is St. Nicholas, the patron saint of the sailor, the whole being enclosed by silver styles, forming a kind of arch and dividing band between frieze and walls, and introducing blue, red, and green ornaments. Under the frieze the walls have been treated in "gesso" work, and afterwards covered with gold leaf and decorated in silver, blues, greens, and browns. The capitals and bases of the pilasters are bronzed, the shafts are silvered, and have black outline designs, relieved with red, and the mouldings and wreaths of frieze, together with the cornice, are gilded. The arch of the sanctuary, representing a heavenly choir, is enriched with arabesque ornaments in light reds on a silvery white ground, broken by small medallions holding cherubs' heads. In the nave, the ceiling, which is flat, 100 ft. long by 60 ft. wide, is divided in 45 panels. The panels are worked in a dark cream colour, on which are painted a red and green ornamentation, emblematic of Christ and the Evangelists. The inside colour of the ornamentation is old gold, whilst the styles appear in somewhat lighter tones. The styles have at their intersections the Cross and halo. Then, again, the cornice is decorated in tones of greys, creams, blues, and greens. Above each of the windows in the nave walls a semi-circular space is formed, with a gold diapered ground, containing the half figure of an angel with wings outspread and holding a shield. The space remaining up to the cornice is a deep cream colour, covered with a powdered pattern. Below this and linable with the tops of the windows, runs a band of silver-grey, with designs in purple, red, and deep gold colour. The walls below, as far as the dado moulding, is in two divisions, viz., large and small panels, the latter forming a base for the former. Inside the large panels a niche is arranged in silver grey, and the surrounding ornamentation is in red and gold. The spandrels formed have received a conventionally shaded arabesque in blues and pinks. The niches will receive later on the figures of the Apostles, heroic, size two only, St. Peter and St. John, being included in the present contract. The panels for the reception of these figures have a diaper design at the bottom of the niche, and behind the figures hangs a drapery in two blues and gold. The bases of the figures are formed of blue and white tiles on which is inscribed in Greek characters the Nicene Creed. The rest of the panels are filled with an arabesque design in light greys and blues, dark blues, violets, and gold. The smaller panels have received an ornamentation of a geometrical character in reds, greens, and blues, and in some panels will be found the emblems of the Apostles. The east wall is divided into panels on each side of the chancel, the centre and large panel being filled with a diapered design on purple ground, with a Greek monogram of our Saviour, the smaller and wide panels having arabesque ornament, with medallions containing the emblems of the Evangelists. The angels corresponding to those over the nave windows are bearing shields, on which are placed the Alpha and Omega. The west wall is divided into panels, three on each side of the baptistry. The central panel is filled with a diaper design, the two side ones containing figures of St. Columba, St. Chad, St. David, and St. Augustine. As a base for the whole scheme, the high dado is decorated with geometrical ornamental designs in blended colours, and emblematical of "Faith," "Hope," and "Charity." In the baptistry the designs represent the Trinity. A large panel on each side wall is shortly to receive figure-subjects; that on the right will be "Christ blessing little children"; that on the left will be "St. Philip baptising the Ethiopian Eunuch." In the small panels at the base are fish in water conventionally treated, and this is emblematic of Christian Baptism. The pilaster on the right, supporting the baptistry-arch, is emblematic of St. John the Baptist, and that on the left is also treated to represent the conversion of the Ethiopian Eunuch.

WINDOW, ST. STEPHEN'S CHURCH, WILLENHALL.—A window, subject, "Lord, to whom shall we go, Thou hast the words of Eternal Life?" has been placed in the south aisle of St. Stephen's Church, Willenhall, as a memorial to the late Mr. Wakeman, by Mr. T. W. Camm, the Studio, Smethwick.

WINDOW, HIGHWOOD CHURCH, ESSEX.—A memorial east window, the work of Messrs. Heaton, Butler, & Bayne, was recently unveiled and dedicated at Highwood Church. The window, which represents the Ascension, is given by Mr. Barlow, of Shacklewell, London, and his sister, Mrs. Francis, now of the Wallands, Lewes, in memory of their father.

FOREIGN AND COLONIAL.

FRANCE.—The monument to Duban was inaugurated last week at the Ecole des Beaux-Arts. It is in a polychromatic treatment, and is situated in the vestibule which precedes the Hemicycle. We hope shortly to give an illustration of it, which will be of more interest and more intelligible than a verbal description.——The exhibition of ceramic painting and sculpture by Edmond Lachenal was opened on Sunday last at the Georges Petit Gallery.——The paintings, studies, and sketches by the celebrated animal painter Charles Jacques, after being exhibited for a good many days, have now been sold, the first day's sale realising 316,000 fr., the second 43,000 fr.——The museum of the Hôtel des Monnaies, at Paris, has been increased by the addition of three new rooms, one of which is to be especially devoted to modern dies.——The architects, MM. Faure-Dujarrie and Vaucheret, have been appointed architectural experts of the Cour d'Appel of Paris.——M. Louzier, diocesan architect of Coutances and Sens, has been appointed architect to the diocesan buildings at Toulouse.——The administrative departments of the 1900 Exhibition are to be installed in the Galerie Rapp at the Champ de Mars.——The Paris Municipality intend to deepen the canal of St. Denis and the basin of La Villette, at a cost of 450,000 fr.——There is talk of a new military port on the Channel coast. The position selected by the Government is that of Port-en-Bessin, between Cherbourg and Havre, at the foot of a cliff which divides two narrow entrances, which are to be enlarged and connected by basins sufficient to take the largest ironclads. A strategic railway will connect Port-en-Bessin with the principal arsenals of the West of France.——The Orleans Railway Company will shortly commence important works for the enlargement of the Stations of Tours and St. Pierre-le-Corps.——M. Théophile Barrau, the sculptor, has been commissioned to execute the monument to the poet André Chenier, which is to be erected at Carcassonne.——The statue of Meissonier, by M. Fremiet, which figured in this year's Salon, is to be inaugurated on Sunday at Poissy.——The death is announced, at Camiers, of a talented young painter, M. Kœtschet, whose works, especially "Une Sortie de l'Eglise à Evoline," were much admired at the Champs de Mars Salon.——The former Art-director of the Sêvres works, M. Gobert, has died at Garenne-de-Bezons, at the age of seventy-three. M. Gobert, who entered on the staff at Sêvres in 1850, on the recommendation of Ingres and Paul Delaroche, was the real and chief promoter of the revival of enamel painting in France.

GERMANY.—The popular attraction at the 1896 Industrial Exhibition in Berlin is to be a gigantic telescope larger than all at present existing, which is to be manufactured at Jena. The Berlin Municipality is to be represented at the Exhibition by a pavilion where the various Departments will exhibit.——The lighting of the new Imperial Houses of Parliament will be effected by 62 arc and 5,000 glow-lamps.——The foundations of the new cathedral at Berlin are now completed, and a start has been made on the superstructure.——Plans for alterations and an enlargement of the Schlossplatz are now being considered by the Municipality.——The White Saloon of the Imperial Palace is to be adorned by nine statues of the reigning princes of the Hohenzollern family, from the Great Elector to the late Emperor Frederick. The statues will be the work of the most eminent German sculptors.——The new Moabit Bridge, which joins the Brückenallée to the Kirchstrasse, is now complete. The structure has three arches, and is carried out in dark grey basalt, from plans by Dr. Hobrecht. The principal ornamentation is afforded by four large stone bears, fashioned by Messrs. Begas, Goetz, Boese, and Pieper respectively.——Professor Theodor Mommsen has been appointed Vice-Chancellor of the Order "Pour le Mérite," Science and Art Division, in succession to the late Professor von Helmholtz.——No fewer than 150 artists took part in the competition for the Bismarck monument, to be set up opposite the new Imperial Houses of Parliament. Thirty premiums, of a total value of 5,000*l.*, were offered.——The sum of 17,000*l.* voted by the Diet of the Duchy of Baden for the restoration of Heidelberg Castle is proving inadequate, as several works which were not provided for in the original estimates must be carried out for the safety of the edifice. The so-called "Karlschanze" has had to be completely demolished and rebuilt, and in other places the ingrowing of roots of trees rendered a similar procedure necessary. The works should be completed next year.——There is to be a Trade and Industrial Exhibition at Lübeck next year. A guarantee fund of over 15,000*l.* has already been subscribed.——No. 11 of the "Limes" Journal contains Lieut. Dahm's report about the investigations on the ancient frontier between Höhr and Langenschwalbach in Nassau. The direction is uniformly south-west, parallel to the Rhine, except in one place where the line of the wall deviates to encompass the castellum of Hillscheid, which is situated on rising ground. The walls of this fort were 1·2 mètres thick, and attached to it was a fortified camp, which, from the absence of traces of buildings, was probably used as a temporary halting-place; the defence of this part of the country was evidently meant to be concentrated on the Rhine, more than on the boundary-wall. Remains of another castellum were unearthed at Höhr, and also of seven watch-towers. Herr Jacobi reports on the investigations between Grauer Berg and Alteburg, on which line traces of nine towers and five castella were discovered, as well as remains of a fairly large settlement at Alteburg. The Bavarian Commissioner, Herr Conrady, has traced the frontier for three kilomètres near Miltenberg, here marked by pointed stones, partly buried in the ground. The West Castellum at Neckarbecken is described by Dr. Schumacher. A complete set of Roman baths was brought to light in connexion with the latter investigations.

SELANGOR, STRAITS SETTLEMENTS.—On Oct. 13 the Governor of the Straits Settlements, Sir Charles B. H. Mitchell, laid the foundation-stone of the new Government offices in Kuala Lumpur, the principal town of the state. The building will meet a long-felt want, as the present offices are much too small, and the staff is continually increasing. The building on plan occupies three sides of a parallelogram, having a frontage of 480 ft. and a depth of 170 ft. The front forms one side of the principal square in the town, the other sides containing the largest and most important building in the place, and the whole when finished will form a fine group of buildings. The new building will provide homes for all branches of the service, with the exception of the police and the Courts of Justice, and will include the State Council Chamber, general post office, and municipal offices. The style of architecture adopted is that usually found in Indian public offices—a style rather difficult to name. At each end are projecting wings, one containing the Mines Department, and the other the Post-office. Between this and the centre on each side are circular staircases projecting in front of the main wall and carried up above the roof with domed tops. In the centre is the main entrance, containing the principal staircase, and in front of this is a large portico. Above the staircase a clock-tower rises to a height of 140 ft. The whole of the offices should be light and cool, as each room has a 12-ft. verandah on at least two sides of it, this latter being a necessity in such a hot climate. The building will be built of bricks made at the P. W. D. Factory, the external walls faced with picked bricks, the dressings being of stucco, as there is no stone in the Malay Peninsula. The roofs are covered with Mangalore tiles made at the factory, and the whole of the work is being carried out departmentally under the superintendence of the architect. The building was designed by the Government Architect.——The same day the Governor opened an extension of railway up to the Pahang boundary, and also visited the Victoria Institution. This building was recently opened. It was built from funds raised in Jubilee year to erect a memorial of Her Majesty's long reign. It is used as a boys' school of a better class than that usually found in the native state, being of the same class as the Raffles School in Singapore. It consists of a large school-room and class-rooms raised well above the ground so as to form a covered playground under the floor. The building is of red brick and half-timber work, with segmental tiles on the roof. This was also designed by the Government Architect, as was also the schoolmaster's bungalow attached to the school.

THE NEW HARBOUR WORKS AT COPENHAGEN.—The new free harbour and depôts at Copenhagen are situated to the north of the town, on the Sound, where formerly extended the fashionable promenade, the Langelinje. There are three great basins or docks, the whole establishment covering an area of many miles. There are half a dozen huge buildings of red bricks on the quays, in which are located the customs house, the administration, railway, and telegraph offices, merchant offices, and the electrical station for lighting the entire establishment. That of the administration is the most ornamental, being surmounted by a fine clock tower. The concern is managed by a company. There are, of course, also immense warehouses, some of which are constructed of corrugated iron. The main basin has an area at the bottom of 780 ft., and a depth of 30 ft., so that the largest steamers may discharge right into the warehouses. The main basin is divided into three parts by parallel walls of concrete, 3,000 ft., 2,000 ft., and 1,000 ft. in length. Here is also situated the largest warehouse of all for the storage of grain, which has seven stories. The works have been five years under construction, and the cost has been nearly a million sterling.

MISCELLANEOUS.

THE TRANS-SIBERIAN RAILWAY.—The commission for the construction of the Trans-Siberian railway has, according to St. Petersburg journals, decided to accelerate the work so that the line may be opened for traffic in its entirety in 1901, instead of as originally contemplated three years later.

VILLA NEAR CHRISTIANIA.—Referring to the competition design for a villa near Christiania, which we published on page 204 *ante*, and to our remark that we gave it as an example of the present taste in villa architecture in Norway, we hear that the *Teknisk Ugeblad*, which is said to be the organ of the Norwegian Association of Architects and Engineers, denies that the design is representative of Norwegian architectural taste of the day.

ABERDEEN: THE HOUSING OF THE WORKING

CLASSES ACT, 1890.—The statutory notices have been published of application by the Town Council for a Provisional Order to be confirmed in next Session of Parliament, in connexion with the scheme for dealing with the unhealthy area adjoining Exchequer-row. Compulsory powers are asked for acquiring 1'3 acre of land with the buildings thereon at an estimated cost of 25,776*l.*, the value of superfluous lands available for re-sale being computed at 14,826*l.* The area to be acquired is bounded on three sides by existing but narrow streets—viz., Exchequer-row, Ship-row (part of), and Chapel-lane (part of); and, still further to improve the access, the house No. 1, Virginia-street, will also be required and taken down. Power is sought to clear away the houses where advisable, to form, divert, or improve streets, and to appropriate parts of the areas acquired, or other lands belonging to the Corporation, for the erection of suitable dwellings for persons of the working-classes displaced by the scheme—all such dwellings, when erected, to be satisfactory in every respect. The labouring-class population to be displaced numbers (including families) 736; but for these it is stated that sufficient and suitable accommodation can be had in 240 vacant dwelling-houses in the neighbourhood, the rents of which vary from 3*l.* to 10*l.* per annum. It is thus probable that the centre of the area will meantime be converted into an open space, pending the settlement of the question of the construction of a new street from the docks to Castle-street, if not farther; and it is likely that one of the new buildings will be a model common-lodging house. The Order is not expected to be opposed. The new street spoken of would, if carried out fully as suggested, run a long way through the city and form a new north road, two miles in length; but the large initial expenditure—about 250,000*l.*—is more than the Town Council can face—at present at least.

CHURCH BUILDING.—The Incorporated Society for Promoting the Enlargement, Building, and Repairing of Churches and Chapels held its first monthly meeting for the present session on the 15th inst., at the Society's House, No. 7, Dean's-yard, Westminster Abbey, S.W., the Archdeacon of Essex in the chair. Grants of money were made in aid of the following objects, viz.: — Building new churches at Aldrington St. Philip, near Brighton, 150*l.*; Cockington St. Matthew, near Torquay, 200*l.*; Crewe St. John, 100*l.*; Forest-gate St. Mark, Essex, 75*l.*; and Matthew's Park St. Matthew, in the parish of West Ham, Essex, 75*l.*; rebuilding the church of St. Elfrida, Llansaintfraed-in-Elvel, near Builth, Radnor, 25*l.*; and towards enlarging, or otherwise improving, the accommodation in the churches at Ebony St. Mary, Kent, 10*l.*; Gawcott Holy Trinity, near Buckingham, 15*l.*; Treffgarn, near Haverfordwest, 15*l.*; and Upperby St. John Baptist, near Carlisle, 25*l.* Grants were also made from the Mission Buildings Fund towards building mission churches at Llanegwad, near Nantgaredig, Carmarthen, 25*l.*; and Washington, Durham, 20*l.* The following grants were also paid for works completed:—Wanstead Slip St. Columba, Essex, 250*l.*; Brechfa St. Teilo, near Nantgaredig, 20*l.*; Linthorpe St. Barnabas, near Middlesbrough, 20*l.*, balance of a grant of 100*l.*; the Meir Holy Trinity, near Longton, Staffs., 50*l.*; Clarbeston St. Martin, near Haverfordwest, 30*l.*; St. Keverne, Cornwall, 60*l.*; Alderton St. Margaret, near Cheltenham, 25*l.*; Barnes St. Michael and All Angels, 10*l.*, making 185*l.*, on account of a grant of 225*l.*; Northborough St. Andrew, near Market Deeping, 15*l.*: Puncknowle St. Mary, near Abbotsbury, Dorset, 30*l.*; Ealing St. Peter, Middlesex, 200*l.*; Taynton St. Lawrence, near Gloucester, 30*l.*; Woolwich St. Mary, Kent, 120*l.*; Witherne St. Margaret, 10*l.*; North Bersted, near Bognor, 40*l.*; Long Hanborough, near Oxford, 40*l.*; King's Hill, near Wednesbury, Staffs., 40*l.*; Holmer-green, near Amersham, Bucks, 40*l.*; and Sunderland Point, near Lancaster, 15*l.* The Society likewise accepted the trust of sums of money as repair funds for Ockley-green St. John, Surrey, 100*l.*; Walkden Moor St. Paul, Lancs., 10*l.*; and Speen St. Mary, Berks, 500*l.*

NEW BOARD SCHOOLS, LONDON, 1894-5.—For their annual provision of increased school accommodation, by way of new sites or the enlargement of their existing schools, the London School Board have scheduled a total of seventy-six parcels of land, situated as follows:—William-street, Langford-road, Kingwood-road, Bryans-lane, and Munster-road, *or* Sherbrooke-road, Fulham; Newcombe-street, Kensington; Bolingbroke-road, Hammersmith; Lots-road, and Keppel-street, Chelsea; Blackstock-road, Rotherfield-street, Marlborough-road, Payne-street, and Goodinge-road, Islington; Clarence-place, Central-street, St. Luke's; Winchester-street, Clerkenwell; Church Manor-way, and Swing Gate-lane, Plumstead; Siebert-road, Randall-place, and Creed-place, Greenwich; Forston-street, and Grange-street, Shoreditch; Olga-street, and Wood-street (with Church-row), Bethnal Green; Windsor-road, and Eleanor-road, Hackney; Padua-road, the Anerley Board School, and Madeline-road, Penge; Mantle-road, Canterbury-road, and Shardeloes-road, Deptford; Rushy Green, and Malham-road, Lewisham; Salvador West, Tooting; Priory-road, Lambeth; Forfar-road. and Lavender Sweep, Battersea; Rosendale-road, Streatham, and "Arborfield," No. 27, Streatham Hill; New Park-road, Clapham; Beresford-street, Faunce-street, and Chatham-row, St. Mary, Newington; Cormont-road, Southampton-street, *or* Peckham-road, Choumert-grove, Nunhead-passage, Marlborough-road, and Leo-street, *or* Asylum-road, *or* Studholme-road, Camberwell; Rhyl-street, Netley-street, and Longford-street, Marylebone; Nos. 26 and 28, Haverstock Hill; Salisbury-place, Monnow-road, and Limasol-street, Bermondsey; St. George's-road, and Gerridge-street, Southwark; Collingwood-street, Ratcliffe; Cable-street, St. George's-in-the-East; Bright-street and Bromley Cottages, Dee-street and Culloden-street, Bromley; Portman-place and Morpeth-street, St. Matthew's, Bethnal Green; Emmott-street, Jubilee-street, Greenfield-street, Mile End; Albion-street, Mile End, *or* Malmesbury-road, Stratford-le-Bow; Northey-street, Limehouse; and a portion, about 50,800 square ft., of the Millbank Prison site. These amount to a net total of seventy-one sites, covering an aggregate of 41½ acres; the piece in Rosendale-road, West Lambeth Division, being about 3½ acres. It will be observed how the Board Schools, following the population, are gradually springing up in the remoter districts, and that a large share of the new schools are to be built in the east and south of London. The highest divisional totals, 11½ acres for twelve schools, occur both in Greenwich.

THE CITY CREMATORIUM.—At the meeting of the City Commissioners of Sewers held on Tuesday last the main question on the agenda was a motion to rescind the resolution passed by a small majority a month ago in favour of erecting a crematorium at the City cemetery at Ilford. After a brief discussion of the report of the Streets Committee the meeting was made special for the discussion of the rescinding resolution, which was moved by Mr. Turner, seconded by Mr. Deputy White, and supported by Mr. Bridgman and other members. The resolution of October 23 recommended the promotion of a public Bill in Parliament to give the Commissioners the necessary powers for the erection of the crematorium, but the meeting was now informed by the legal officer of the Corporation that the matter could not be the subject of a public Bill since it concerned one municipality only, and not the country generally. An attempt was made to get the matter recognised as one of national importance, on the ground that cremation must sooner or later be adopted by the nation for sanitary reasons, and that the City of London, as a leader of opinion, might properly promote a public Bill giving legal powers to all municipal authorities for the purpose. A recital by Mr. Deputy White of the list of the years' liabilities of the City ensured the rejection of the project once more. On a show of hands the majority was declared to be in favour of the rescinding resolution, and on a division this conclusion was confirmed by 24 against 15.

CORRESPONDENCE CARDS.—Messrs. Sprague & Co. send us a set of correspondence cards with sketches from Windsor and its neighbourhood; the set comprising a dozen different sketches, occupying each a portion of a card, giving views of Windsor Castle, Eton College, Windsor Cloisters, the choir-stalls in St. George's Chapel, one or two bits of street architecture in Windsor, &c. They look pretty, and will do very well to send Christmas greetings on.

NEW PULPIT, CATHOLIC CHURCH, SPANISH-PLACE.—A new pulpit, the gift of Lady Sykes, has just been added to the Catholic Church, Spanish-place. It is designed by Mr. E. Goldie, and executed in alabaster, with detached Purbeck marble shafts below the floor-line. The figures of SS. Paul and John, seated under canopies, divide the body of the pulpit into three equal parts. The interior is lined with cedar, and the same material forms a covering to the top of the cornice. With the exception of the handrail and gates, which are by Messrs. Hart, Son, Peard, & Co., the work has been carried out by Messrs. Earp & Hobbs, sculptors, of Lambeth and Manchester.

WOOD-TURNING MACHINE.—On Wednesday, Mr. H. J. Burke, of the firm of Messrs. Burke, Bros., of Scranton, Pa., U.S.A., gave a private view at 40, Kirby-street, Hatton Garden, E.C., of a machine for turning wood, either round or square. The machine, which is worked by steam-power, consists of a changeable set of revolving cutters, and a movable frame to carry the wood, travelling backwards and forwards over them, and is operated by three levers. The machine can turn newel-posts, balusters, porch-columns, chair and table-legs, columns and pilasters for cabinet work, &c., either round, square, octagon, hectagon, and pentagon, or one half round and one half square, or almost any design. The machine can turn out concave and convex work, and it can deal with both hard and soft woods, and at great speed. We were informed that eighty square-turned baluster-rails can be turned out finished from the machine in one hour, at a cost for labour and power of about 1s. 6d., and that it can turn out ten different patterns in thirty minutes, making the necessary changes as well. A complete set of machines for turning consists of two machines, which can turn from ½ in. up to 8 inches square, and from 1 in. to 10 ft. long. The machine was not in working order at the time we saw it, but samples of the work which it had previously done were shown, and judging from their character the machine is likely to have an important effect on the wood-turning trade.

LAND SALE.—Mr. H. J. E. Brake will offer for sale on the 29th inst., at the Mart, Tokenhouse-yard, E.C., ninety-three plots of freehold land, being part of the Peltars' allotment estate, in the Parish of Headley, Hants; 110 plots of freehold land on the South Wonston estate, near Winchester, and a freehold estate at West Hanningfield, Essex.

PORTLAND CEMENT AND ADMIXTURES.—At a meeting of the cement trade held at the London Chamber of Commerce on Tuesday last, it was resolved:—"That a committee be appointed, with power to engage experts, to investigate into the question of the admixture of Kentish Rag Stone, other stone or other material with Portland cement so far as carried on at home and on the Continent, and to report and advise thereon. Representatives of the following firms have been appointed upon the committee: Messrs. Barron & Co.; the Burnham Cement Co.; Francis & Co., Limited; Gibbs & Co.; Hilton, Anderson, Brooks, & Co.; J. C. Johnson & Co.; Lee, Son, & Co.; the London Portland Cement Co.; the Tunnel Cement Co.; J. B. White & Bros.; and the Wouldham Cement Co.

LEGAL.

A SURVEYOR'S FEES.

THEOBALD *v.* GREGAR.

THIS case was heard on Monday, before Mr. Roxburgh, Assistant-Judge, and a Common Jury, in the Lord Mayor's Court. The plaintiff, Mr. Henry Theobald, a quantity surveyor, of 87, Finsbury-pavement, sued the defendants, Messrs. W. Gregar & Son, builders, of Stratford, to recover the balance of an account for professional fees. Mr. Duke (instructed by Mr. Phillips) was counsel for the plaintiff, and Mr. Raven (instructed by Mr. Godlee) for the defendants. In the early part of last year the defendants were engaged in erecting a factory and offices for Messrs. Johnson & Butcher at Stratford. The plaintiff was employed to take out the quantities for a number of "extras" at a commission of 2½ per cent. on the total amount of additions, and the like for omissions plus the usual out-of-pocket expenses. His total account amounted to 44*l.* 12s. 6d.; he had been paid 32*l.* 4s., and now he sued for the balance. The jury found for the plaintiff for the amount claimed.

A BUILDER'S RESPONSIBILITY.

AN action of some importance to the building trade was heard at the Bow County Court, on the 16th inst., in which William Munday, a builder's scaffolder, of Bermondsey, sued Messrs. Perry & Sons, builders, of the Tredegar Works, Bow, to recover £80, under the Employers' Liability Act, for injuries sustained through the negligence of defendant's foreman, and also through defective plant.

Mr. Sturgess was for the plaintiff and Mr. Ruegg for the defendants.

Plaintiff's case was that on the evening of April 30 he was employed in erecting a scaffold outside an arch on the approach to the Tower Bridge. Matthews, defendants' foreman, told him to get the poles up at once. He, in doing so, had to pass under an arch lighted by one lamp. It was a windy evening, the lamp was blown out, and, in the darkness, he caught his foot at the end of a tramway line, the ends of which projected upwards, was thrown down, pitched upon his right knee, the bone of which was fractured. He was taken to Guy's Hospital, where he remained three weeks, and was not able to work again till the last week in September. His average wages were 30s. per week.

Dr. Lees described the injuries, and believed there would always remain a chronic inflammation in the knee-bone.

Mr. Ruegg contended that defendants could not be held responsible, as the works were lighted, not by the contractors, but by the Corporation of London. Besides, the plaintiff knew the arch and the locality, and he had been told that if he had not sufficient light, to go to the foreman's office, and he could always have an extra lantern or candles, but he never complained. Messrs. Perry allowed the plaintiff 1*l.* per week for eleven weeks after the accident, besides assisting his wife in other ways.

His Honour held that as defendant's foreman gave the order, it was a neglect on his part not to see that the men had sufficient light to enable them to do the work with safety, and he must find for the plaintiff. Judgment for 50*l.*, with costs.

Mr. Ruegg intimated that he should give notice of appeal.

CAPITAL AND LABOUR.

STATE OF EMPLOYMENT IN OCTOBER.—According to this month's *Labour Gazette*, a slight improvement has taken place in the condition of the labour market as a whole during the month of October, and the effect on employment in several industries of the termination of the Scottish coal dispute is clearly perceptible. Fifty-seven trade unions, with an aggregate membership of 358,507, have made returns, showing the total number of unemployed members at the end of October to be

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

COMPETITIONS.

Nature of Work.	By whom Advertised.	Premiums.	Designs to be delivered.
*Schools	Willesden School Bd.	.....	Dec. 1
School Buildings, Hereford	Managers of St. James' School	.....	Dec. 8
*Workhouse and Infirmary	Ipswich Union	100*l.* and 50*l.*	Mar. 25'95
*Hotel, Newcastle, co. Down	Belfast and co. Down Railway Company	.....	No date

CONTRACTS.

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
Library and Offices, near Kettering	Rothwell Local Board	Gotch & Saunders	Nov. 27
Cottages, Laund Hill Farm, near Huddersfield	.....	John Kirk & Sons	do.
Street Works, York-road, &c.	West Hartlepool Corp.	J. W. Brown	do.
Additions to Schools, Tilbury Dock	Chadwell St. Mary School Board	James Thompson	do.
Flagging, &c. Worsley-road	Farnworth(Lancs.)Loc. Board	W. J. Lomax	Nov. 28
Additions, &c. to School	Boscastle (Cornwall) U. D. School Board	O. B. Peter	do. do.
School, Whitgreave	G. H. Tunnicliffe	.....	.....
Paving Works	Eastleigh (Hants) Loc. Board	A. W. Galbraith	Nov. 29
*Road Works and Tarpaving	East Barnet Valley Local Board	G. W. Brumell	do.
Road Works, South-road	Waterloo (Lancs.) Loc. Board	F. Spencer Yates	do.
*School Desks	Doncaster Corporation	*Official*	do.
School Buildings, Carr-lane	do.	do.	do.
*Taking-down Trellis Works and replacing it with New Trellis	Met. Asylums Board	do.	do.
Drainage Works	Mid-Calder (N.B.) Parochial Board	do.	Nov. 30
Valve Work, Water Main	Swansea Town Council	do.	do.
Four Houses, near Tim Bobbin Inn, Burnley	Humphrey Bracewell	Arthur Robinson	do.
Shops, Warehouses, &c. Dublin-road, Belfast	Salvation Army	Vincent Craig	do.
Additions to Tank and Pump House, Calder Vale	Burnley Paperworks Co. Lim.	*Official*	Dec. 1
Mortuary, &c. Southwell-road	Mansfield Corporation	R. F. Vallance	Dec. 3
Sewers (2,200 yds.), &c. Erdington and Witton	Aston (Birmingham) U.R.S.A.	J. E. Willcox	do.
Granite Spalls (2,000 tons)	Hastings Corporation	P. H. Palmer	do.
Schools, near Buckingham	Thornborough Sch. Bd.	G. Bennett & Sons	do.
Street Works, Broughton-drive, &c.	Garston (Lancs.) Loc. Board	F. W. Bowden	do.
*Broken Granite	Paddington Vestry	*Official*	do.
*Granite Kerb, York Paving, &c.	do.	do.	do.
Station and House, Malvern Wells	do.	do.	Dec. 4
*Making-up West Hill, Sydenham	G. W. R. Co.	do.	do.
*Making-up Queen's-road, Forest Hill	Lewisham Bd. of Wks.	do.	do.
*Making-up Roads	do.	do.	do.
	Tottenham Local Bd.	P. E. Murphy	do.

CONTRACTS—*Continued.*

Nature of Work or Materials.	By whom Required.	Architect, Surveyor, or Engineer.	Tenders to be delivered.
Flint Road Metal (2,000 cub. yds.)	Hove (Sussex) Com.	*Official*	Dec. 5
Alterations, &c. to North Board Schools	Folkestone Sch. Bd.	Jos. Gardner	do.
Service Reservoir, Cilfriw	Neath R.S.A.	W. E. Clason Thomas	do.
Pumping Station	Salcombe (Devon) Loc. Board	F. Beesley	do.
Schools, Penrhiwceiber, Glamorgan	Llanwonno School Bd.	A. O. Evans	do.
Paving, &c. Upper Station and Upper Sea Roads	Bexhill (Sussex) Loc. Board	M. D. Graves	Dec. 6
Sewerage Works, Slack's Valley	Chadderton (Lancs.) Local Board	Jas. Diggle	do.
*100 Lamp Columns	Bethnal Green Vestry	F. W. Barrett	do.
*Removable Floor and Platform	Islington Baths and Washhouses Com.	A. H. Tiltman	do.
*Street Paving Stones	Glasgow Police Com.	Mr. Whyte	do.
*Supply of New and Purchase of Old Stores	G. N. R. Co.	*Official*	Dec. 8
Sewerage and Waterworks, Portstewart, Ireland	Coleraine Union	*Official*	do.
*Chimney Stack	King's Norton U.R.S.A.	R. Godfrey	Dec. 10
*New Destruction Works	Bournemouth Town C.	*Official*	do.
Main Sewers (8,000 yards), &c.	Barnoldswick Loc. Bd.	Brierley & Holt	do.
*New Church and Schools	Rev. R. Laver	C. Pertwee	do.
Infirmary, Selly Oak, near Birmingham	King's Norton Union	D. Arkell	Dec. 11
*Construction of Main Approach, &c.	Cromer ProtectionCom.	J. C. Melliss	do.
Extension of Schools, Gilwern	Llanelly (Brecon) Sch. Bd.	E. A. Johnson	Dec. 12
*Additions to Wards at Union House	Woolwich Union	J. O. Cook	Dec. 13
Schools, Church-walk, Ulverston	.....	J. W. Grundy & Sons	Dec. 15
*Waterworks	Skibbereen Union, co. Cork	R. W. Walsh	do.
House and Shop, Forest Hall, Bedlington, Northumberland	R. W. Simpson	.....	No date
Temporary Church, St. Saviour's, Heckmondwike	The Vicar	.....	do.
Mission Room, Classrooms, &c. Holy Trinity Church, Burnley	.....	Chas. Parsons	do.
Thirty-five Houses, Pin Mill Brow, Ardwicke, Manchester	.....	J. H. Pemberton	do.
Water Mains (700 yards), Meuston and Hawksworth, Yorks	.....	W.B.Woodhead & Sons	do.
Alterations, &c. to St. Paul's Church, Seaton, near Workington	.....	G. D. Oliver	do.
*Fourteen Cottages	.....	E. C. Tompkins	do.
Farm Buildings, Down Hall, Alkton, Carlisle	.....	H. Higginson	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in.
*Draughtsman	Bristol U.S.A.	120*l.*	Nov. 27
*Inspector of Nuisances	Cheltenham Twn Coun.	150*l.*	Nov. 28
*Sanitary Inspector	Hammersmith Vestry	2*l.* 5*s.*	do.
*Foreman of Works	Met. Asylums Board	3*l.* 10*s.*	Nov. 29
*Building Inspector	Willesden Local Board	150*l.*	Dec. 4
*Measuring Clerk in Architect's Department	LondonCountyCouncil	100*l.* &c.	Dec. 5

Those marked with an asterisk (*) are advertised in this Number. *Competitions, p.* iv. *Contracts, pp.* iv., vi., *and* viii. *Public Appointments, pp.* xviii. *and* xx.

26,404, or 7·4 per cent., compared with 7·6 per cent. in the fifty-three unions from which returns were received for September. The Steel trade has continued to improve in most districts. In Scotland there has been a marked improvement following the ending of the coal dispute, few men remaining idle. Though most branches of the Engineering and kindred trades are still depressed, the proportion of unemployed members of unions connected with these trades has fallen from 9·8 to 9·5 per cent. since the end of September. Though fairly well employed as a rule for the time of year, the various branches of the Building trades show a slight falling-off; not, however, more than is accounted for by seasonal causes. The percentage of unemployed in the unions concerned has risen from 3·6 to 3·8. The Furnishing and Woodworking trades continue fairly busy on the whole. The proportion of unemployed in the unions connected with these trades has fallen from 4·7 to 4·6 per cent. In London, the Building trades show some falling-off, due to seasonal causes, 148 branches of four unions with an aggregate membership of 11,027, returning 536 (or 4·9 per cent.) as unemployed, compared with 3·8 per cent. last month. The bricklayers, masons, and plasterers report trade as "moderate," the carpenters and joiners, plumbers and painters as "dull," especially the latter. On the whole, the Furnishing and Woodworking trades have maintained the slight improvement reported to have taken place during August and September. Returns from twenty-six branches of nine unions, with an aggregate membership of 4,180, show that 267 (or 6·4 per cent.) were unemployed, compared with 7 per cent. last month.

MEETINGS.

FRIDAY, NOVEMBER 23.

Architectural Association.—Mr. Keith D. Young on "Sanitation in Regard to Hospitals and Infirmaries." 7.30 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Mr. J. F. J. Sykes on "Objects and Methods of Inspection." 8 p.m.

SATURDAY, NOVEMBER 24.

Institution of Junior Engineers.—Visit to the *Globe* new Printing-office and Linotype Machine Installation, 367, Strand. 2.30 p.m.

Sanitary Institute (Lectures and Demonstrations for Sanitary Officers).—Inspection and Demonstration of the Sewage and Destructor Works, Ealing. 2 p.m.

Queen's College, Cork.—Mr. Arthur Hill on the "History of Architecture": I. 3 p.m.

MONDAY, NOVEMBER 26.

Surveyors' Institution.—Mr. A. Dudley Clarke on "The Incidence of Taxation on Land." 8 p.m.

Sanitary Institute (Lectures for Sanitary Officers).—Dr. Arthur Newsholme on "Nature of Nuisances, including Nuisances the Abatement of which is Difficult." 8 p.m.

TUESDAY, NOVEMBER 27.

Institution of Civil Engineers.—Further Discussion on Mr. A. J. Durston's paper on "The Machinery of War-Ships." 8 p.m.

University Extension Society (Chelsea Centre, Chelsea Town Hall).—Mr. Arnold Mitchell on "English Architecture." VIII. 3 p.m.

WEDNESDAY, NOVEMBER 28.

Society of Arts.—Mr. Hiram Maxim on "Experiments in Aeronautics." 8 p.m.

Sanitary Institute (Lectures and Demonstrations for Sanitary Officers).—(1) Inspection and Demonstration in the Parish of St. George's, Hanover-square. 2 p.m. (2) Professor A. Bostock Hill on "Trade Nuisances." 8 p.m.

Northern Architectural Association.—Mr. D. H. S. Cranage on "The Elizabethan and Renaissance Periods." 7.30 p.m.

THURSDAY, NOVEMBER 29.

Society of Antiquaries.—8.30 p.m.

Sanitary Institute (Sanitation of Industries and Occupations).—Mr. R. M. Simon, B.A., on "Workers in Copper, Zinc, Brass, and Tin." 8 p.m.

Northern Architectural Association (University Extension Lectures).—Mr. D. H. S. Cranage on "Architectural Art."

FRIDAY, NOVEMBER 30.

Institution of Civil Engineers (Students' Meeting).—Mr. Charles H. Olley on "Sub-aqueous Excavation at Newry." 8 p.m.

Glasgow Architectural Association.—Annual Conversazione.

Sanitary Institute (Lectures for Sanitary Officers).—Professor A. Wynter Blyth on "Sanitary Law, English, Scotch, and Irish; General Enactments Public Health Act, 1875; Model By-laws, &c." 8 p.m.

SATURDAY, DECEMBER 1.

Northern Architectural Association (Masonic Hall, Sunderland).—Mr. F. Caws on "The Architect."

Queen's College, Cork.—Mr. Arthur Hill on "The History of Architecture." II. 3 p.m.

RECENT PATENTS:

ABSTRACTS OF SPECIFICATIONS.

20,157.—POLISHING GRANITE: *T. Inman.*—In polishing rings or discs, movable blocks fitted with frame and pins are used. This allows for different substances for polishing different material, and adds to the durability of the polishing disc.

20,158.—FLUSHING CISTERNS: *D. Thompson.*—The valve is fitted with a syphon-pipe, which is actuated by tilting upon its seat, admitting water to the flushing-point. All the fittings are arranged with a view to simplicity, and the efficiency of this system depends on pneumatic action.

22,597.—DRAIN-PIPES: *R. G. Restall.*—This specification describes apparatus for passing through drains and allowing them to be cleaned, cemented, or repaired without the necessity of taking the pipes up from the ground. The form of the apparatus is a long wooden rod with an india-rubber disc which is drawn backward and forward, cleaning the drain or forcing cement into joints where needed.

23,495.—BRICK AND TILE KILNS: *J. C. Bates.*—This is yet another arrangement of flues and divisions in kilns for the purpose of utilising the waste heat and ensuring uniformity in burning all classes of earthenware tiles, pipes, &c., and bricks.

23,923.—FLUSHING CISTERNS: *F. J. Bostel.*—This is an addition to the usual ball-cock cistern, with syphon discharge in the shape of a tipping-cistern with special arrangements for gradually filling and discharging.

24,120.—PIPES FOR WATER-CLOSETS: *F. Speed.*—The branch connexion-pipes between water-closets and soil and ventilating pipes are made of iron and in one piece.

14,699.—FIREPROOF CEILINGS AND FLOORS: *W. Whittaker.*—The construction is:—The bricks forming the arch are covered to a suitable depth with cement concrete, and on the top of the concrete is placed a layer of asphalte ½ in. thick. This is then covered with crushed granite and cement, 2 in. deep, giving a hard and smooth surface.

17,028.—WOOD BLOCK PAVEMENTS: *J. G. Wilson* (U.S.A.).—The sub-structure of hydraulic cement having been floated in the usual way, a series of grooves or channels are formed on its surface; when this has hardened hot mastic is poured in, and on this the blocks are laid.

NEW APPLICATIONS FOR LETTERS PATENT.

NOVEMBER 5.—21,183, W. Bosley, Brushing-out Sewer or Drain-pipes. — 21,191, J. Adams and J. Sherwin, Stamping Undercut Dovetailing Notches or Indentations on or in the backs of Encaustic and other Tiles and other Ceramic productions.—21,212, W. Mockett, Window Sash-holder.—21,242, G. Phillips, Combined Fireplace and Air-heating Apparatus.

NOVEMBER 6.—21,275, T. Vercoe, Sewers.—21,280, G. Bowcock, Combined Door-latch and Lock.—21,282, J. Pritchard and others, Hinges.—21,305, O. Whitehead, Disinfecting Water-closets.—21,308, T. Marshall, Window-sashes.—21,333, J. Jenkins, Water Waste-preventer.—21,360, F. Von Heydebrand und der Lasa, Windows.

NOVEMBER 7.—21,384, C. Mannon, Door-checks.—21,397, T. Chandler, Draught Excluder for Bottoms of Doors.—21,414, A. Beckett, Preventing the Rattling of Window-sashes. — 21,417, J. Rae, Chimney-shafts, Ventilators, &c. — 21,439, E. Lacey, Electrical Sewer Ventilators.

NOVEMBER 8.—21,495, T. Coleman, Fireproof Lath for Building or other Purposes.—21,513, F. Stevenson, System for dealing with Smoke and Fumes emitted from Chimneys. —21,514, H. Evans, Draught-excluder for Windows, Doors, &c.—21,518, H. Drimer, Scaffolds. — 21,525, T. Lewis, Paving and Flooring Block.—21,530, A. Sinclair, Doors.—21,543, E. Lefèvre, Water-closets.

NOVEMBER 9.—21,586, M. Williams, Asphalt Blocks and

Slabs for Paving, &c.—21,587, H. Champness, Hanging Window-sashes.—21,611, J. Houghton, Windows.—21,631, E. Orval, Drying Kilns.

NOVEMBER 10.—21,654, W. Wheeler, Syphon Flushing-cistern.—21,682, J. Shanks, Water-closet Apparatus.—21,685, W. Tate, Anti-syphon Pipe for Water-closets.—21,692, R. Allen, Crest Tiles.—21,722, J. Woolstone, Finger-plates, Panels for Doors, &c.—21,735, E. Weckwarth and M. Hoeft, Lime Mixtures and Cement.—21,736, H. Stilgoe, Piles of Groynes.—21,745, D. Arámburn, Surveying Instruments.

PROVISIONAL SPECIFICATIONS ACCEPTED.

18,364, G. Waller, Hinge for Doors or Covers of Cesspits, Drains, &c.—19,779, G. Wishart and A. Jeffrey, Cased Windows.—19,891, J. Maskelyne, Door-Spring.—19,892, J. Boyd-Wilson, Fire-Resisting Constructions, and in Materials therefor.—19,933, M. McNamera, Flushing-Cisterns.—19,961, J. Armstrong, Drain-testing Machine.—20,028, W. Ralph, Door-stop and Spring.—20,055, W. Calvert, Street-Gully.—20,279, E. Morton & H. Baden, Valve Water-Closets.—20,371, The Simplex Window Fittings Co., Ltd., & F. Daw, Construction of Window-Sashes, and Fittings and Fastenings for Same.—20,395, H. Wilson, Windows.—20,464, W. Bramley, Sliding-Sashes.—20,517, F. Prince, Ventilators.—20,528, J. & J. Hampton, Ltd., Combined Mitre-cramp and Saw-holder.

COMPLETE SPECIFICATIONS ACCEPTED.

(Open to Opposition for Two Months.)

21,471, W. Lindsay, Treads or Wearing Surfaces for Floors, Staircases, &c.—444, C. Northcote & J. Verity, Electric-light Fittings.—1,658, A. Soar, Tread for Stairs, &c.—10,585, C. Geige, Method or Process for the Manufacture of Artificial Wood.—19,088, T. Jack, Syphon-Cistern.—19,180, C. Balph & E. Wright, Fireproof Floors and Ceilings.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

NOVEMBER 8.—By *Wilkinson, Son, & Welch:* 43, Cambridge-rd., Brighton, f., 2,000*l.*

NOVEMBER 12.—By *T. B. Westacott:* 13, Sandall-rd., Camden-road, u.t. 66 yrs., g.r. 6*l.*, r. 44, 430*l.*

NOVEMBER 13.—By *G. F. Francis:* 6, Healey-st., Kentish Town, u.t. 64 yrs., g.r. 7*l.*, r. 40*l.*, 400*l.*—By *Briant & Son:* 107, Newington Butts, f., area 2,000 ft., 920*l.*; 4, Clock-passage, f., 90*l.*—By *Rogers, Chapman, & Thomas:* 23, Tregunter-rd., Kensington, u.t. 37 yrs., g.r. 7*l.*, 1,300*l.*—By *Debenham, Tewson, & Co.:* 107 and 109, Glenarm-rd., Clapton, u.t. 81 yrs., g.r., 10*l.*, 420*l.*—By *Messrs. Leage:* 53, Morland-st., Goswell-rd., f., r. 32*l.*, 330*l.*; 4 and 6, Essex-rd., Islington, f., 1,500*l.*

NOVEMBER 14.—By *Boyton & Pegram:* 15, Marville-rd., Fulham, u.t. 88 yrs., g.r. 5*l.* 15s., 210*l.*; 82, Ifield-rd., Brompton, u.t. 72 yrs., g.r. 7*l.* 10s., r. 38*l.*, 395*l.*; 117, St. John-st.-rd., Islington, u.t. 15 yrs., g.r. 36*l.*, r. 50*l.*, 46*l.*—By *D. J. Chattell:* 1, Beaumont-st., Marylebone, u.t. 23 yrs., profit rental 75*l.* a-year, 710*l.*—By *Fortescue & Co.:* 97, 99, and 101, Galleywall-rd., Bermondsey, u.t. 30 yrs., g.r. 15*l.*, 380*l.*; 22, Carroun-rd., Kennington, u.t. 30 yrs., g.r. 4*l.* 15s., r. 30*l.*, 165*l.*; 36 and 38, Carroun-rd., u.t. 29 yrs., g.r. 8*l.*, r. 64*l.*, 395*l.*; 12, Ingrave-st., Battersea, u.t. 46 yrs., g.r. 5*l.*, 185*l.*; 23, Khyber-rd., u.t. 83 yrs., g.r. 5*l.*, 200*l.*; 6 and 8, Edna-st., u.t. 83 yrs., g.r. 13*l.*, 510*l.*; 78, Northcote-rd., Clapham, f., r. 50*l.*, 900*l.*; 7, Salcott-rd., Wandsworth, f., r. 35*l.*, 460*l.*; 18, Cottage-pl., Battersea, f., 195*l.*

NOVEMBER 15.—By *Clark & Co.:* 15, Charleville-rd., Kensington, u.t. 82 yrs., g.r. 10*l.*, r. 85*l.*, 700*l.*—By *P. Hodson:* 43, Charteris-rd., Finsbury-pk., u.t. 70 yrs., g.r. 6*l.*, r. 32*l.*, 255*l.*: 9, Coleridge-rd., u.t. 66 yrs., g.r. 9*l.*, r. 43*l.*, 415*l.*—By *Farebrother, Ellis, Clark & Co.:* 1 to 6, Bark-pl., Bayswater; and 24 to 29, Caroline-pl., u.t. 22 yrs., g.r. 20*l.*, 2,600*l.*; 7 to 10, 18 and 19, Bark-pl.; and 4, Elizabeth-pl., u.t. 22 yrs., no g.r., 1,820*l.*—By *Ball, Norris, & Hadley:* No. 83, Brixton Hill, u.t. 70 yrs., g.r. 25*l.*, r. 90*l.*, 425*l.*; three plots of f. land, Reynold's-rd., Peckham, 152*l.*; 6, Abbeville-rd., Clapham, f., 700*l.*; 2, Acanthus-rd., Lavender Hill, u.t. 71 yrs., g.r. 4*l.* 5s. r. 25*l.*, 185*l.*—By *H. C. Newson:* No. 117, Brompton-rd., profit rental of 195*l.*, u.t. 8 yrs., 1,000*l.*; 34, Brompton-cres., u.t. 32 yrs., g.r. 15*l.*, r. 100*l.*, 900*l.*; 32, Brompton-cres., u.t. 32 yrs., g.r. 15*l.*, r. 110*l.*, 1,000*l.*; l.g.r. of 40*l.*, Patshull-rd., Kentish Town, u.t. 66 yrs., g.r. 1*l.*, 860*l.*; l.g.r. of 26*l.*, Patshull-rd., u.t. 66 yrs., 590*l.*; l.g.r. of 19*l.*, Patshull-rd., u.t. 66 yrs., 435*l.*; l.g.r. of 7*l.* 7s., Patshull-rd., u.t. 66 yrs., 175*l.*; "Fownhope," Ewell-rd., Surbiton Hill, u.t. 51 yrs., g.r. 15*l.*, 360*l.*; profit rental of 55*l.*, Duke-st., &c., St. James, u.t. 4 yrs., 75*l.*—By *Newbon & Co.:* 21, Leighton-cres., Kentish Town, u.t. 63 yrs., g.r. 7*l.* 10s., r. 46*l.*, 475*l.*; 23, Leighton-cres., u.t. 63 yrs., g.r. 7*l.* 10s., r. 52*l.*, 475*l.*; 141, 143, and 145, Kentish Town-rd., u.t. 41 yrs., g.r. 24*l.*, 2,340*l.*; 9 to 19 and 31, Castle-rd., u.t. 41 yrs., g.r. 38*l.* 10s., r. 278*l.*, 2,490*l.*; 1 to 9, Castle-pl., u.t. 41 yrs., g.r. 39*l.*, r. 275*l.* 10s., 2,320*l.*; 77, 79, and 81, Victoria-rd., u.t. 41 yrs., no g.r., r. 118*l.*, 1,320*l.*; 16, Upper Addison-gardens, Kensington, u.t. 64 yrs., g.r. 7*l.* 16s., r. 65*l.*, 500*l.*—By *A. Stearn:* F.g.r. of 396*l.* 17s. 6d. Hallsville, Canning Town, less rent-charge 7*l.* 2s. 6d., reversion in 72 to 78 yrs., 7,000*l.*—By *Stimson & Sons:* 11, Gilston-rd., Brompton, u.t. 37 yrs., g.r. 7*l.*, 975*l.*; 22, Fieldgate-st., Whitechapel, f., r. 22*l.*, 405*l.*; 48, Elsted-st., Walworth, u.t. 15 yrs., g.r. 4*l.*, 85*l.*; 35A, 35B, and 35C, Brady-st., Whitechapel, u.t. 67 yrs., g.r. 18*l.* 18s., 600*l.*; 2 and 3, Cleveland-ter., Barnes, u.t. 75 yrs., g.r. 14*l.*, r. 70*l.*, 530*l.*; 32 and 34, Byrne-rd., Balham, u.t. 81 yrs., g.r. 13*l.*, r. 60*l.*, 455*l.*; 6, 7, and 8, St. John's-rd., Penge, f., r. 97*l.*, 990*l.*; 1, 2, and 3, Brighton-ter., Catford, u.t. 76 yrs., g.r. 18*l.* 18s., 375*l.*; 1 and 3, Elderton-rd., Sydenham, u.t. 73 yrs., g.r. 12*l.*, 140*l.*

NOVEMBER 16.—By *T. G. Wharton:* 46, St. James's-st., Walthamstow, f., r. 50*l.*, 930*l.*; 26 and 28, Sandover-rd., Camberwell, u.t. 87 yrs., g.r. 15*l.* 10s., r. 92*l.*, 410*l.*; 44, Kempshead-rd., u.t. 87 yrs., g.r. 5*l.* 15s., 200*l.*; 9, Gibbon-rd., Nunhead, u.t. 80 yrs., g.r. 5*l.*, r. 25*l.*, 225*l.*—By *W. Bradly:* 76, Wellington-st., Deptford, f., 300*l.*; 5 and 7, Marmadon-rd., Plumstead, u.t. 72 yrs., g.r. 4*l.* 4s., r. 32*l.* 10s., 160*l.*; 19, 21, and 23, Marmadon-rd., u.t. 72 yrs., g.r. 6*l.* 9s., r. 46*l.* 16s., 240*l.*; 28, Church-st., Bethnal Green, and 10 and 12, Ebor-st., f., r. 102*l.* 8s., 740*l.*; "Warwick House," Hatherley-rd., Sidcup, f., 305*l.*—By *Prothero & Morris:* "Linton," Upton-lane, u.t. 64 yrs., g.r. 8*l.*, r. 85*l.*, 900*l.*—By *Baker & Sons:* "North Hall," Mortimer-rd., Hampstead, u.t. 57 yrs., g.r. 6*l.*, r. 160*l.*, 2,475*l.*; 12 to 18 Mortimer-cres., u.t. 56 yrs., g.r. 3*l.* 2s., r. 473*l.*, 4,500*l.*; "Lincoln Lodge," Totteridge Pk., Herts, and 3a. 1r. 1p., f., r. 80*l.*, 1,810*l.*; The Manor Farm House, and 2r. 27 p., f., r. 27*l.*, 800*l.*: f. land and cottages, 3a. or. 30p., r. 5*l.*, 265*l.*; a plot of f. land, 1a. 3r. 7p., r. 3*l.*, 160*l.*; a plot of c. land, Egham, 3a. or. 5p., r. 8*l.* 10s., 270*l.*

[*Contractions used in these Lists.*—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; e.r. for estimated rental; u.t. for unexpired term; p.a, for per annum; yrs. for years; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; yd. for yard, &c.]

PRICES CURRENT OF MATERIALS.

TIMBER.		
Greenheart, B.G. ton	8/0/0	0/0/0
Teak, E.I. ..load	10/0/0	16/0/0
Sequoia, U.S.ft.cu	1/10	2/2
Ash, Canada load	3/5/0	4/10/0
Birch, do.	2/15/0	4/0/0
Elm, do.	4/0/0	5/5/0
Fir, Dantsic, &c.	1/10/0	3/5/0
Oak, do.	2/15/0	4/15/0
Canada	5/10/0	7/0/0
Pine, Canada red	2/10/0	3/0/0
Do. Yellow	3/5/0	5/10/0
Lath, Dantsic, fath	4/10/0	5/10/0
St. Petersburg..	5/0/0	6/10/0
Wainscot, Riga, &c., log	2/15/0	5/0/0
Odessa, crown	2/15/0	5/0/0
Deals, Finland 2nd & 1st std 100	7/0/0	9/0/0
Do. 4th & 3rd	7/0/0	8/0/0
Do. Riga	7/0/0	8/10/0
St. Petersburg, 1st yellow	9/10/0	12/0/0
Do. 2nd yellow	7/10/0	9/0/0
Do. white	8/0/0	10/10/0
Swedish	7/0/0	15/10/0
White Sea	6/10/0	14/0/0
Canada, Pine 1st	22/0/0	26/10/0
Do. do. 2nd	17/0/0	18/0/0
Do. do. 3rd, &c.	7/10/0	10/10/0
Do. Spruce, 1st	8/10/0	10/0/0
Do. do. 3rd & 2nd	6/10/0	7/10/0
New Brunswick	6/0/0	7/0/0
Battens, all kinds	5/0/0	21/0/0
Flooring boards, sq., 1 in. prep. 1st	0/9/6	0/14/6
Do. 2nd	0/7/0	0/11/6
Other qualities	0/5/0	0/6/6
Cedar, Cuba ..ft.	/3	/4
Honduras, &c.	/3	/4½
Mahogany, Cuba	/3	/6
St. Domingo, cargo av.	/3	1/6
Mexican do. do.	/3	/4
Tobasco do. do.	/3½	/6
Honduras do. ..	/3½	/5½
Box, Turkey ton	4/0/0	13/0/0
Rose, Rio	7/0/0	18/0/0
Bahia	6/0/0	17/0/0
Satin, St. Domingo	0/0/5	0/1/0

TIMBER (*continued*).		
Satin, Porto Rico	0/0/6	0/1/6
Walnut, Italian ..	0/0/3½	0/0/7
METALS.		
Iron—Pig, in Scotland ..ton	2/2.6	0/0/0
Bar, Welsh, in London	5/12/6	5/15/0
Do. do. at works in Wales	5/2/6	5/5/0
Do. Staffordshire, in London	6/0/0	6/10/0
COPPER—British cake and ingot	42/0/0	42/10/0
Best selected ..	42/10/0	43 0/0
Sheets, strong ..	51/0/0	0/0/0
Chili, bars	39/18 9	40/3/9
YELLOW METAL lb	0/0/4¾	0/0/4¾
LEAD—Pig, Spanish ..ton	9/15/0	0/0/0
English cvm. brands	9/16 3	9/17.6
Sheet, English, 6 lbs. per sq. ft. and upwards	10/15/0	11/0/0
Pipe	11/15/0	0/0/0
ZINC—English sheet ..ton	18/10/0	19/0/0
Vieille Montagne	19/10/0	0/0/0
TIN—Straits	64/5/0	64/15/0
Australian	64/7/6	64/17/6
English Ingots..	69/0/0	69/10/0
Banca	67/0/0	68/0/0
Billiton	67/0/0	67/5/0
OILS.		
Linseed ..ton	20/2/6	20/10/0
Cocoanut, Cochin	28/0/0	0/0/0
Do. Ceylon	24/10/0	0/0/0
Palm, Lagos	25/0/0	0/0/0
Rapeseed, English pale	21/0/0	21/5/0
Do. brown	19/15/0	0 0/0
Cottonseed ref.	18/0/0	19 0/0
Oleine	21/10/0	24/0/0
Lubricating, U.S.	4/0/0	5/0/0
Do. refined	5/0/0	12/0/0
TAR—Stockholm barrel	1 1/0	0 0 0
Archangel	0 13 0	0 0 0

TENDERS.

[Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than 10 a.m. on Thursday.*]

ABERDEEN (N.B.).—For the erection of a parish hall, Dyce, for Kirk Session of Dyce. Mr. George Scott, architect, Glenugie Cottage, Dyce:—

Masonry.—Geo. Ogg & Son, Bankhead	£379 0
Carpentry.—Edwards & Rae, Dyce	203 19
Slating.—S. & W. Christie, Dyce	50 0

AYLESBURY.—For rebuilding the "Eagle" Tavern, Bierton, for Mr. J. H. Goodey:—

J. S. Holland	£532 0 0	S. Grist	£418 0 0
Mayne & Son	517 0 0	H. T. Grimsdale	417 10 0
Hill & Bonham	497 16 3	W. H. Siarey	399 0 0
Jewell & Paradine ..	477 10 0	Wallis & Son, Chesham (accepted)	365 0 0
H. H. Sherwin	458 15 0		

BANGOR (Wales).—For the construction of pier and landing-stage, Garth Point, for the Corporation. Mr. John J. Webster, M.Inst.C.E., 39, Victoria-street, Westminster, S.W.:—

Head, Wrightson, & Co	£26,779 18 0	Godfrey & Co.	£16,333 15 1
Handysides & Co..	19,759 16 3	The Cleveland Bridge Co.	16,185 0 0
Thames Iron Works Co., Ltd.	19,758 0 0	Tees Side Iron and Engine Works ..	16,130 12 10
Heenan & Froude.	17,805 0 0	John Butler & Co.	15,969 0 0
Arrol Bros.	17,632 10 9	Pearson & Knowles	15,920 0 0
Henry Woodhouse	16,550 0 0	Thomas Gibson	15,612 6 9

BARRY DOCK (Glam.).—For additions to school buildings, with residence, &c., Cadoxton-juxta-Barry, for the U. D. School Board. Mr. Geo. Thomas, architect, Queen's-chambers, Cardiff. Quantities by the architect:—

D. C. Jones & Co.	£8,383	E. R. Evans & Bros.	£7,135
E. J. Ince	8,240	F. Small	6,994
W. Symonds	7,850	G. Rutter, Barry*	6,957
H. Gibbon	7,589	Fryatt Richards†	6,650
D. Davies	7,185		

* Accepted. † Withdrawn.

BRIDLINGTON QUAY.—For the erection of a Catholic Presbytery, for the Rev. Dr. Glancy. Messrs. Smith, Brodrick, & Lowther, architects, Cogan-chambers, Hull. Quantities by Mr. John Watson, Hull:—

G. Pape	£1,165 0 0	J. Rennard	£1,038 0 0
J. Barry	1,160 0 0	Carr & Creaser	1,021 13 0
Shepherdson & Son	1,089 0 0	A. Lyons, Norton, Malton*	990 12 6
F. Blackburn & Son	1,056 0 0		

* Accepted.

CARDIFF.—For the construction of sewers, &c., Whitchurch, for the Union Rural Sanitary Authority. Mr. W. Fraser, engineer, 270, Cowbridge-road, Canton, Cardiff:—

Hy. Roberts	£642 2 0	Wood & Son	£408 8 11
E. J. Ince	509 12 1	D. Evans & Son	407 17 6
Wm. Jenkins	476 2 10	Frank Ashley	390 5 10
Barnes, Chaplin, & Co.	472 1 3	Eli Rees, Whitchurch, Cardiff (accepted) ..	382 19 4
John Mackay	458 16 0		

Engineer's estimate, £375 5s.]

CARDIFF.—For the execution of waterworks, for the Union Rural Sanitary Authority. Mr. W. Fraser, Engineer, 270, Cowbridge-road, Canton, Cardiff:—

Wood & Son	£1,617 19 2	Frank Ashley	£1,381 19 0
E. J. Ince	1,608 7 3	John Mackay	1,363 14 2
D. Evans & Son	1,593 2 10	Jas. Allen	1,352 2 0
Knight & Gregory..	1,432 1 0	Wm. Jenkins	1,338 17 6
Barnes, Chaplin, & Co.	1,406 10 0	J. H. Lovering, Eldon-road, Cardiff (accepted)	1,276 13 4
Hy. Roberts	1,397 10 10		

[Engineer's estimate, £1,348 8s. 6d.]

CRYNANT (Wales).—For the erection of a vestry at the village chapel, near Neath, for the Welsh Calvanistic Methodist Chapel, Crynant, near Neath. Mr. Thomas Jones, architect, James-street, Neath:—

Evan Thomas	£275 0	George Baster, 76, Windsor-road, Neath*	£228 20
Wm. Daniel	260 0		

* Accepted.

EAST GRINSTEAD (Sussex).—For the erection of offices, London-road, for Messrs. Hastie, Little & Hughes. Mr. H. Edmund Mathews, architect, 11, Dowgate Hill, E.C., and East Grinstead. Quantities by Mr. F. G. W. Buss, Theobald's-road, W.C.:—

		Extra for oak.	Total.
T. W. Smith & Son	£2,382 0 0	£349 0 0	£2,731 0 0
C. & H. Gasson	2,435 8 3	230 0 0	2,665 9 0
P. R. Hubbard	2,250 0 0	138 0 0	2,388 0 0
John Morris	2,218 0 0	208 0 0	2,426 0 0
W. A. Field & Co.	2,283 0 0	116 15 0	2,389 15 0
J. Rider Hunt	2,192 0 0	127 0 0	2,319 0 0
Job Luxford	2,145 0 0	132 0 0	2,277 0 0
Davis & Leany	2,069 0 0	114 10 0	2,183 10 0
H. Young	1,922 10 0	195 0 0	2,117 10 0
E. Steer	1,872 13 6	127 0 0	1,999 13 6
Chas. Rice, East Grinstead*	1,700 0 0	100 0 0	1,800 0 0

* Accepted.

ELMSWELL.—For the erection of saw-mills and foundations o covered timber-yard, for Messrs. Geo. G. Passey & Co., Peckham. Mr. W. J. Easton, architect, 1, Colville-road, W.:—

Plummer	£359 19	Andrews	£287 0
C. S. Rice, Elmswell* ..	311 8	Mulley	270 0

* Accepted with some modifications.

ENFIELD.—For private street works, for the Enfield Loca Board of Health:—

	Napier-road.	New-road.	St. James'-road.	Connor-road.
Bloomfield	£593 2 8	£277 13 2	£484 4 5	£566 16 9
Brown	—	—	450 0 0	590 0 0
Betts, Enfield Highway	525 0 0	260 0 0*	406 0 0	523 0 0
Fry, Bros.	580 0 0	305 0 0	496 0 0	554 0 0
Griffiths, Kingsland	559 0 0	269 0 0	509 0 0	519 0 0
Jackson	508 10 0	273 19 0	—	—
Langton & Crawford, Old Ford	488 0 0*	260 0 0	398 0 0	565 0 0
Lee & Son, High Wycombe	540 0 0	282 3 5	349 5 6*	528 12 6
Nichols	556 0 0	277 0 0	449 0 0	523 0 0
Somerfeld	—	277 0 0	—	—
Wadey & Co.	639 10 0	331 0 0	521 0 0	613 10 0
Road Surveyor's Estimate	580 0 0	300 0 0	486 0 0	540 0 0

* Accepted.

HAILSHAM (Sussex).—For alterations, &c., to Board-room at the workhouse, for the Union Guardians. Mr. J. T. Marsden, architect, Hailsham:—

Alfred Thornton	£130	Reuben Head	£113
Richard Butler	118	Charles Harmer, Hailsham*	110

* Accepted.

HARROW.—For additions, &c., to school buildings (Greenhill), for the School Board. Messrs. Houston & Houston, architects, 13, Furnival's Inn, E.C. Quantities by Mr. R. T. Wrenthall, 5, St. Martin's-place, W.C.:—

		For brick-work in cement.
Cowley & Drake	£1,315 0	£1,345 0
Alfred Webb	1,185 0	1,210 0
Jones, Richards, & Co.	1,128 0	1,153 0
J. Smith & Sons	1,127 0	1,152 0
F. G. Minter	1,117 0	1,153 0
—. Bachelor	1,090 0	1,110 0
H. Haynes	1,079 0	1,104 0
P. V. Windebank	1,049 0	1,077 0
F. T. Chinchen	1,042 0	1,036 0
Gullett Bros.	1,034 0	1,064 0
J. F. Collinson	1,008 0	1,032 0
J. C. Rackham	943 10	958 10
C. Jackson, Vauxhall (accepted) ..	836 0	844 0

KILWINNING (N.B.).—Accepted for the construction of a hospital, for the Northern District Committee of the County Council of Ayr. Mr. John Armour, architect, Irvine. Quantities by Messrs. Henry Herbertson & Co., 167, St. Vincent-street, Glasgow:—

Digging, Masonry, and Brickwork.—John Young, Kilwinning	£1,598 13
Carpentry and Joinery.—Thos. Miller & Co., Saltcoats	927 17
Plumbing and Gasfitting.—Robert Irvine, Kilwinning	544 17 3
Slating.—Thos. Hall, Irvine	292 5 1
Plastering.—Ford Bros., Kilmarnock	316 11 0
Heating.—Thos. Hall, Irvine	78 18 2
Total	£3,759 2 2

LAUNCESTON.—For the construction of a service reservoir at Windmill, for the Town Council. Messrs. S. W. Jenkin & Son, engineers, Liskeard:—

John Shellabeer	£1,800	G. H. Strike	£1,498
John D. Hobbs	1,600	Robt. G. Burt, Launceston (accepted)	1,360
Thomas & Son	1,500		

LIMERICK.—For the reconstruction in iron of the landing-stage at the head of Glin Pier, for the Grand Jury of the County of Limerick. Mr. John Horan, C.E., County Surveyor, 50, George-street, Limerick:—

James O'Driscoll	£2,500	Finch & Co., Chepstow, Wales (accepted)	£2,082
E. Manisty	2,221		

[Engineer's estimate, £2,129.]

LLANDRINDOD WELLS.—For building two houses at Llandrindod Wells, Radnorshire, S.W. Messrs. Owen Morris, Roberts & Son, architects, Bank Place, Portmadoc:—
Robert E. Davies, Rock Terrace, Llandrindod Wells £2,700
[Without foundations and haulage.]

LONDON.—Accepted for alterations, new bar-fittings, &c., at the "Wenlock Arms," Wenlock-road, City-road, for Messrs. Courage & Co., Lim. Mr. A. J. England, architect, 181, Queen Victoria-street:—
H. B. Oldrey & Sons, Kilburn £1,782

LONDON.—For the execution of drainage works, St. George's Workhouse, Mint-street, Southwark, for the St. Saviour's Union Guardians. Messrs. Henry Jarvis & Son, architects, 29, Trinity-square, Southwark, S E Quantities by architects :—

T. Linfield	£2,725 0	W. Biscombe	£1,474 0
J. W. Falkner	1,683 0	Windebank & Co.	1,458 0
Kirk & Randall	1,675 0	G. Newton	1,453 6
G. G. Rayner	1,609 0	G. Parker	1,368 0
J. Jackson	1,530 14	Raym ent & Sons	1,342 13
Morrison & Goodwin	1,529 0	Knight & Sons	1,137 0
E. Mills	1,481 0	Calnan & Co.	1,132 0

LONDON.—For paving, &c., Providence-place, and three (portions) other roads, for the Hammersmith Vestry. Mr. H. Mair, C.E., Surveyor, Vestry Hall, Broadway, Hammersmith, W. :—

Providence-place.

H. J. Greenham	£435	Nowell & Robson	£367
Robertson & Grant	399	Rogers & Co., 6, St. Lawrence-road, Notting Hill*	345
J. Ball	369		
G. Wimpey & Co.	367		

Hartswood and Wendell-roads.

Nowell & Robson	£1,617	J. Ball	£1,349
Rogers & Co	1,527	Wimpey & Co., The Grove, Hammersmith*	1,300
H. J. Greenham	1,350		

Cobbold-road.

Rogers & Co.	£677	Nowell & Robson	£597
Robertson & Grant	645	H. J. Greenham	580
Wimpey & Co.	605	J. Ball, Chiswick*	497

* Accepted.

LONDON.—Accepted for alterations, repairs, and new fronts to "The Little Brown Jug," 92 and 93, Palmerston-road, Kilburn, for Messrs. Brandon & Co., Limited, Chester. Mr. Foulsham, architect, 105, High-street, Bromley-by-Bow :—

H. B. Oldrey & Sons, Kilburn £349 10

LONDON.—Accepted for new drains and sanitary works at Nos 2, 5, and 8, Queensborough-terrace and 66, Queen's-road, Bayswater, under the superintendence of Mr. Henry Hall, architect :—

H. B. Oldrey & Sons, Kilburn £342 10

LONDON.—Accepted for alterations, repairs, and new shop-front, &c., at No. 3, Cambridge-road, Kilburn, for Mr. A. Wilfred Coomber :—

H. B. Oldrey & Sons, Albert Works, Kilburn £520

[No competition.]

LONDON.—Accepted for new store-sheds at Providence-place, Kilburn, for the Gas Light and Coke Company, Limited. Mr. W. A. Brown, architect :—

H. B. Oldrey & Sons, Kilburn £348

LONDON.—For the erection of a double pavilion for ninety-eight beds at the Northern Convalescent Fever Hospital, Winchmore Hill, for the Metropolitan Asylums Board. Messrs. Pennington & Son, architects, 8, John-street, Adelphi, and Queen's-chambers, Manchester. Quantities by Mr. W. T. Farthing :—

Leslie & Co.	£24,229 0 0	Perry & Co.	£21,888 0 0
Shillitoe & Son	24,000 0 0	S. F. Halliday	21,649 0 0
Patman & Fotheringham	23,171 0 0	Killby & Gayford	21,625 0 0
H. Wall & Co.	22,950 0 0	E. Houghton & Son	21,477 0 0
C. Wall	22,623 0 0	F. Drysout	20,924 0 0
W. Johnson & Co.	21,983 0 0	Kerridge & Shaw	20,867 5 9
		Kirk & Randall*	20,823 0 0

* Accepted.

LONDON.—For the erection of new boiler-house, for Messrs. Geo. G. Bussey & Co., Museum Works, Peckham. Mr. W. J. Easton, architect, 1, Colville-road :—

Crook	£145	Chafen, 21, Trundleys-road, Deptford (accepted)	£105
Frampton	112		

LONDON.—For the supply of 500 tons Guernsey granite lumps for breaking, for the Poplar Union Guardians :—

	Per Ton. s. d.		Per Ton. s. d.
A. & F. Manuelle	9 2	J. Mowlem & Co.	9 1
Wm. Griffith	9 3	Wm. Gibbs	8 5
Wm. Muir & Co.	9 3	R. L. & J. Fennings	8 3

LONDON.—For works in additions and alterations at No. 22, Old Queen-street, St. James' Park, Westminster, S.W., for Mr. Leo F. Schuster. Mr. A. William West, architect, 44B, Maddox-street, W. Quantities by Messrs. Dunk & Bousfield, Billiter-square-buildings, E.C. :—

Colls & Son	£3,650	Bush & Sons	£3 353
Simpson & Son	3,632	Holland & Hannen	3,271

LONDON.—Accepted for alterations and repairs to the House at Bowes Manor, Bowes Park, for the Guardians of the Poor of St. Mary, Islington. Mr. William Smith, architect, 65, Chancery-lane :—

Peck, Hornsey £929

LONDON.—For the erection of mortuary, for the Finchley Local Board :—

Geo. Johnson	£172 0	W. Shewry	£108 0
Batchelor	125 0	A. T. Hawkins, Finsbury Park (accepted)	74 10
J. Pointing	116 0		
H. Claridge	109 10		

LONDON.—For the erection of almshouses, Clock-passage, Hampton-street, Walworth, S.E. Messrs. George Lansdown & Son, architects, 5 and 7, Warwick-street, S.W. :—

Stanley G. Bird	£4,200	J. F. Collinson	£3,815
T. Rider & Son	4,150	Spencer & Co.	3,730
John Tyerman	4,080	Canning & Mullins	3,711
Wm Downs	3,080	H. Burman & Sons*	3,635

* Accepted.

LONDON.—For alterations to stables, Jacob-street, Bermondsey, for Messrs. Chas. Southwell & Co. Mr. Lawton R. Ford, architect, St. Thomas' Chambers, London Bridge, S.E. :—

A. White & Co.	£389	H. J. Williams (accepted)	£340
J. Bullers	382		

LONDON.—For the completion of premises Nos. 75 and 77, Abbey-street, Bermondsey, for Mr. G. Austin. Mr. Lawton R. Ford, architect, St. Thomas' Chambers, London Bridge, S.E. :—

B. Wells	£683	W. Cook	£490
J. Bullers	532	W. Balaam (accepted)	405

LONDON.—For re-erecting premises Nos. 79 and 81, Abbey-st., Bermondsey, for Mrs. L. M. Allin. Mr. Lawton R. Ford, architect, St. Thomas' Chambers, London Bridge, S.E. :—

Pritchard & Renwick	£1,022	H. J. Williams	£889
B. Wells	987	A. White & Co.	849
J. Bullers	960	G. Potton	650
J. Marsland	945		

MONMOUTH.—For the erection of school buildings, for the Haberdashers' Company. Mr. Henry Stock, architect, 9, Denman-street, London Bridge, S.E. :—

Higgs & Hill	£19,984 0 0	Collins & Godfrey	£18,693 0 0
W. Lissaman, jun.	19,976 0 0	W. Bowers & Co.	18,225 0 0
W. Jones	19,500 0 0	J. Perkins	17,950 0 0
A. King & Sons	19,483 0 0	W. Cowlin & Son	17,737 0 0
J. Jenkins	19,002 0 0	J. Linton	17,700 0 0
D. Davies	18,850 0 0	W. Gradwell & Co.	17,643 18 6
H. Willcock & Co.	18,760 0 0		

NEATH (Glam.).—For the execution of water supply works, Resolven, for the Rural Sanitary Authority. Mr. W. E. Clason Thomas, engineer, Post-office Chambers, Neath :—

Jno. Williams & Jno. Walker	£253 17 6	Jas. and Rees Herbert	£118 10 0
Hul & Son	145 0 0	Geo. Harris, Glynneath*	111 0 0
Geo. Ball	145 0 0		

* Accepted.

PENISTONE (Yorks.).—For the construction of sewers, &c., Cawthorne, for the Union Rural Sanitary Authority. Quantities by Mr. Geo. Swift, Cawthorne :—

Burrows & Sons, Park-road, Barnsley £247 11 0

PERSHORE (Worcs.).—For the construction of waterworks, Wyre Piddle and Bishampton, for the Union Rural Sanitary Authority. Mr. J. E. Wilcox, C.E., Union-chambers, 63, Temple-row, Birmingham :—

Jones & Fitzmaurice	£1,073 0 0	Cruwys & Holbrough	£925 0 0
S. Wood	1,040 0 0	G. Law	8 5 0 0
G. Trentham	986 14 0	Holmes & Co.	860 0 0
H. Roberts	951 17 4	Jenkins & Son	836 4 0
J. Peattie	945 15 0	J. Coomber	835 0 0
R. Stanton	941 0 0	H. Law, Wolverhampton (accepted)	730 0 0

[Engineer's estimate, £819.]

PORTSMOUTH.—For the erection of school buildings to accommodate 2,072 children, Drayton-road, North-end, for the School Board. Mr. A. H. Bone, architect, Cambridge Junction, Portsmouth. Quantities by architect :—

J. Potter	£27,000 0 0	W. W. Learmouth	£23,354 0 0
Light & Son	25,069 0 0	H. Jones	22,253 0 0
G. H. Wilkins	24,740 0 0	Crockerell, Landport*	22,137 4 2
W. W. Evans	24,700 0 0		

Accepted.

PORT TALBOT (Wales).—For supplying and laying 1,200 yds. cast-iron water main, &c., for the Margam Local Board. Mr. Robt. Leigh, surveyor, Taibach, Port Talbot :—

C. & F. Gaen	£652 17 6	Jas. Allan	£381 16 9
John Davies	429 10 5	Clark & Balmer	367 1 4½
John Williams	423 6 0	Batchelor & Snowden, Cardiff (accepted)	333 18 9
Barnes, Chaplin & Co.	407 4 9		

ST. AUSTELL (Cornwall).—For the erection of public rooms for the St. Austell Public Rooms Company, Limited. Mr. Sylvanus Trevail, architect, Truro. Quantities not supplied :—

W. K. Ball	£4,455 0	Jas. Bunt	£3,575 0
W. H. Smith	4,160 16	J. F. Lakeman	3,550 0
Walter Giles	3,921 0	Tom J. Smith, St. Austell (accepted)	3,189 0
A. Carkeek	3 660 0		

STAINES.—For the erection of a house, Wraysbury. Messrs Sargeant & Son, architects, Slough :—

Gray	£717 0	Pither	£570 0
A. Reavell	697 0	Simmons	550 10
Beecham & Rowlands	679 0	Burfoot	539 0
Bowyer	630 0	J. H. R. Atkins	522 10
Chennells	630 0	Lake, Staines*	521 0
Haliey	575 0		

* Accepted.

STIFFORD (Essex).—For the erection of school buildings, for the School Board. Mr. Arthur J. Gale, architect, 4, Serjeants' Inn, Fleet-street, E.C. :—

	Total Amount. £ s.	Flint Facing. £	Add Glazed Brick Dado. £	Total for Works Ordered. £ s.
G. Sharpe	3,045 0	90	200	3,245 0
T. White & Son	3,050 0	91	180	3,230 0
J. J. Lawrence	2,784 10	50	85	2,869 10
S. Parmenter*	2,569 0	32	97	2,666 0
J. Band	2,600 0	100	60	2 660 0
J. Brown	2,435 0	30	98	2 533 0
H. J. Carter, Grays*	2,239 10	51	94	2,333 10

* Accepted.

STOURBRIDGE.—For the execution of sewerage works. Tividale (Contract No. 3), for the Upper Stour Valley Main Sewerage Board. Messrs. Marten & Fiddian, engineers, Church-street Chambers, Stourbridge. Quantities by engineers :—

George Bell	£3,283 0 0	T. Vale	£2,748 11 0
Jones & Fitzmaurice	2,942 0 0	J. Mackay	2 630 11 1
Geo. Law	2,900 0 0	J. Guest & Sons	2,480 0 0
G. Trentham	2,885 0 0	Jacob Biggs, Birmingham (accepted)	2,361 6 4
H. Holloway	2,875 18 6		
H. Dorse & Son	2,750 15 5		

WALSALL.—For sewering, paving, &c., Arundel and three other streets, for the Corporation :—

Cambridge-street.

H. Holloway, Bilston-road, Wolverhampton £407 7 4

Arundel-street.

H. Holloway, Bilston-road, Wolverhampton 632 0 0

Emery-street.

H. Holloway, Bilston-road, Wolverhampton 295 0 0

Thorpe-road.

Jas. Atkins, Walsall 170 0 0

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WEDNESFIELD.—For the erection of school buildings, for the School Board. Mr. T. H. Fleeming, architect, 102, Darlington street, Wolverhampton :—

Wistance	£2,911 10 0	Gough	£2,460 0 0
Wilcock & Co.	2,739 0 0	Guest	2,429 7 6
Jones	2,630 0 0	Jonas & Son	2,365 0 0
Lovatt	2,600 0 0	Bradney & Lloyd	2,315 0 0
Skett	2,540 0 0	Guest & Son	2,300 0 0
Lees	2,517 15 6	Horton	2,230 0 0
Beards	2,507 10 4	J. Tildesley, Willenhall (accepted)	2,198 0 0
Hughas	2,492 0 0	Herbert	2,191 0 0
Cave	2,489 0 0		
Ham	2,465 0 0		

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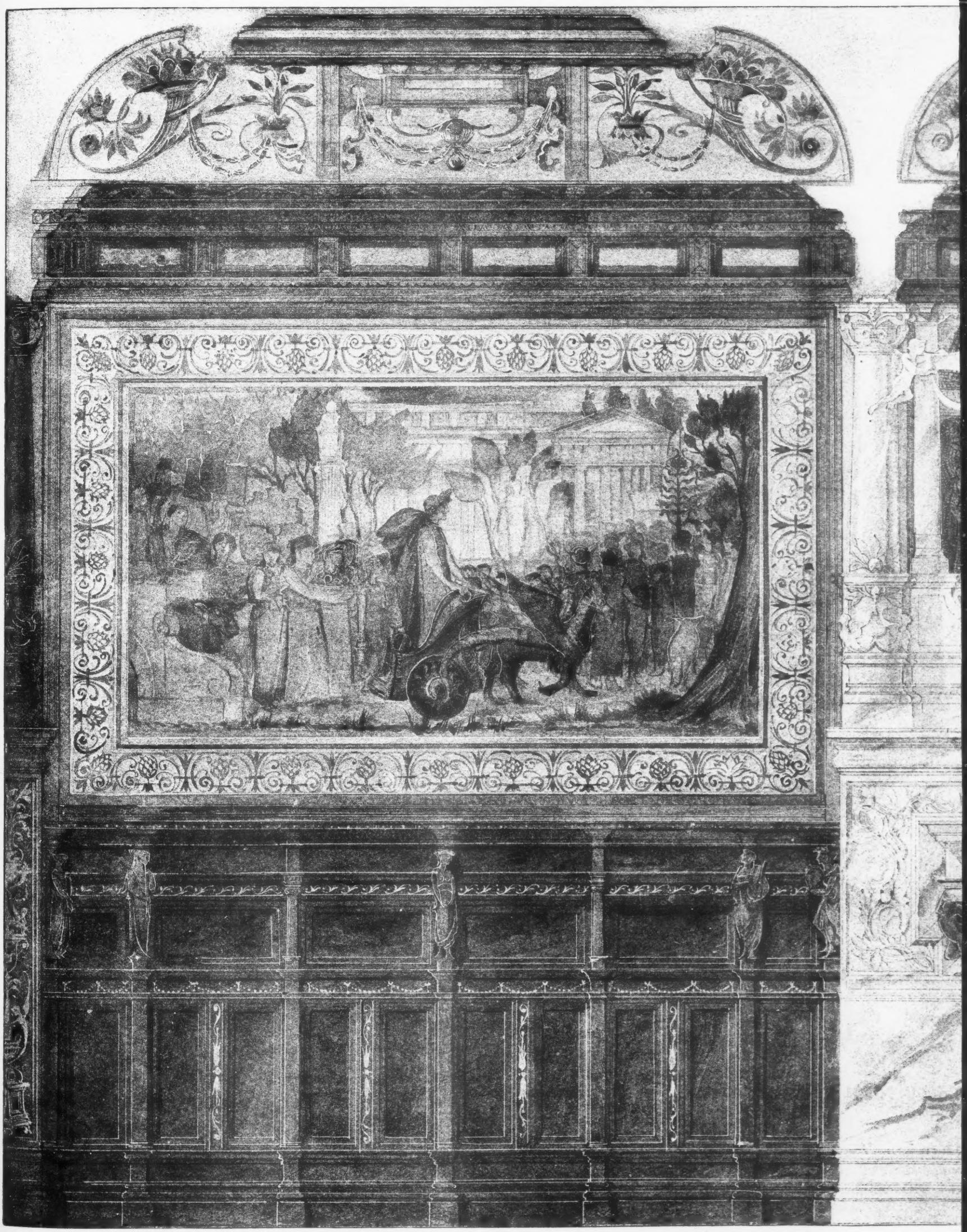

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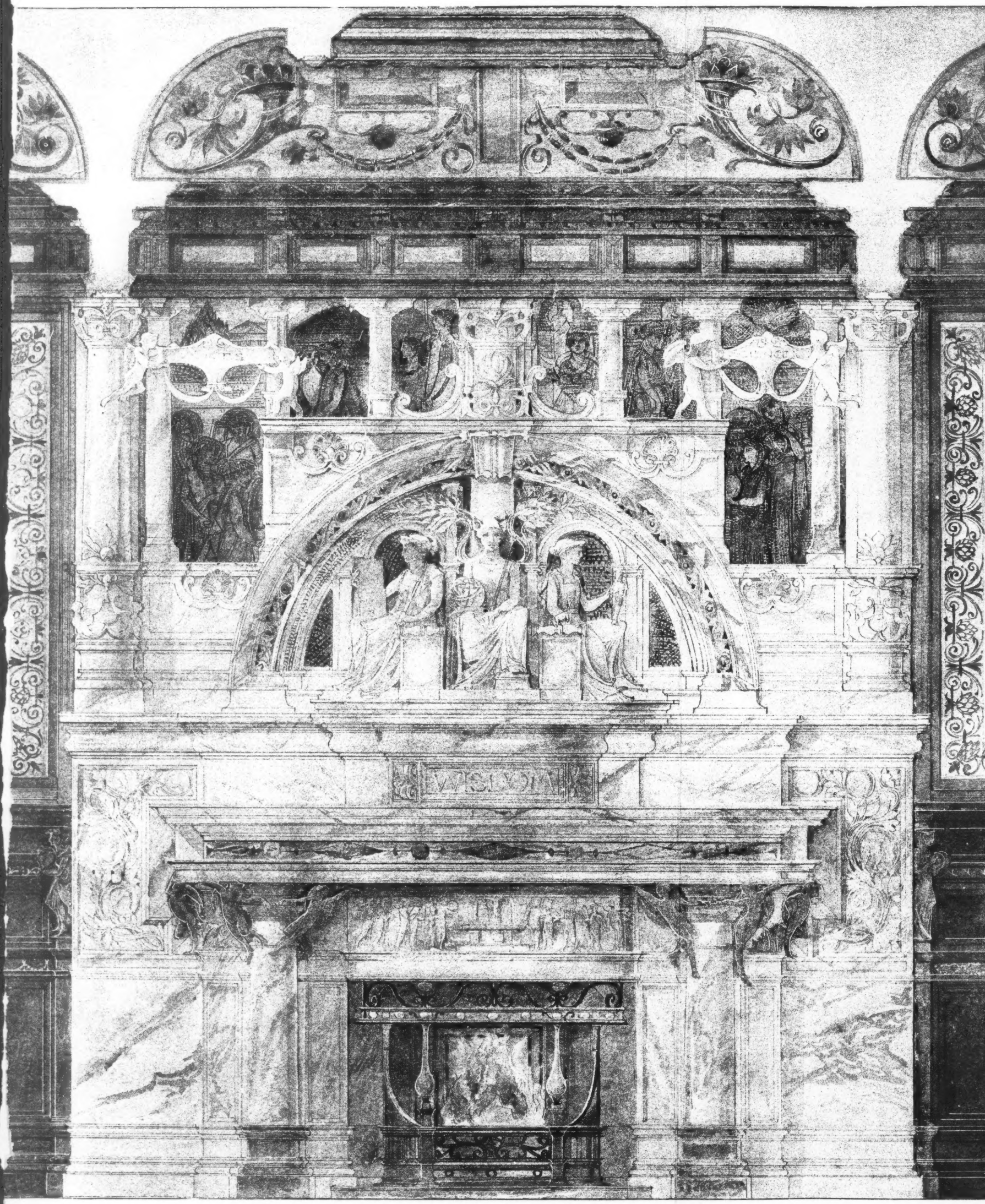
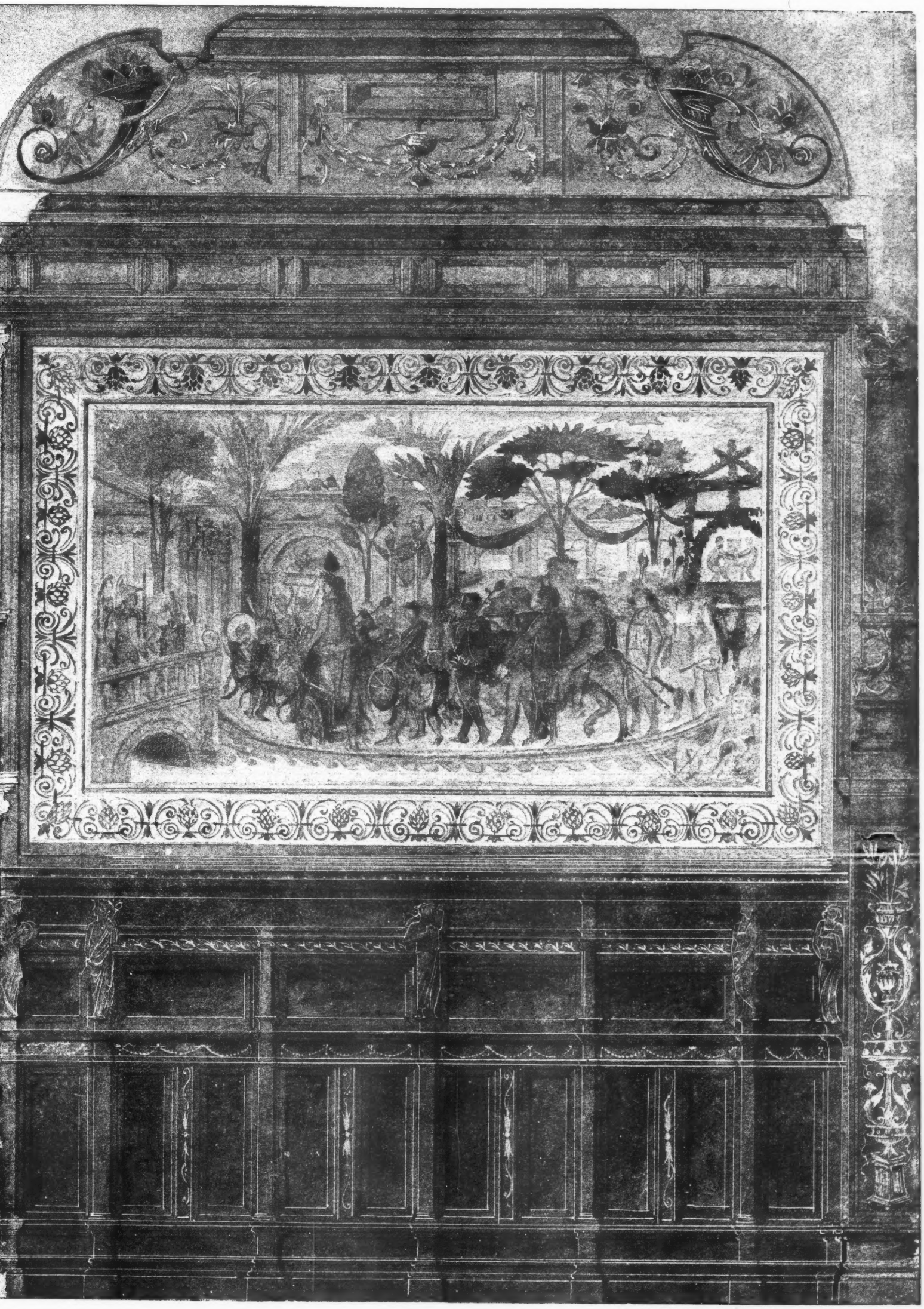


DESIGN SHOWING PORTION OF A BANQUETING HALL.—By Mr W F Randall



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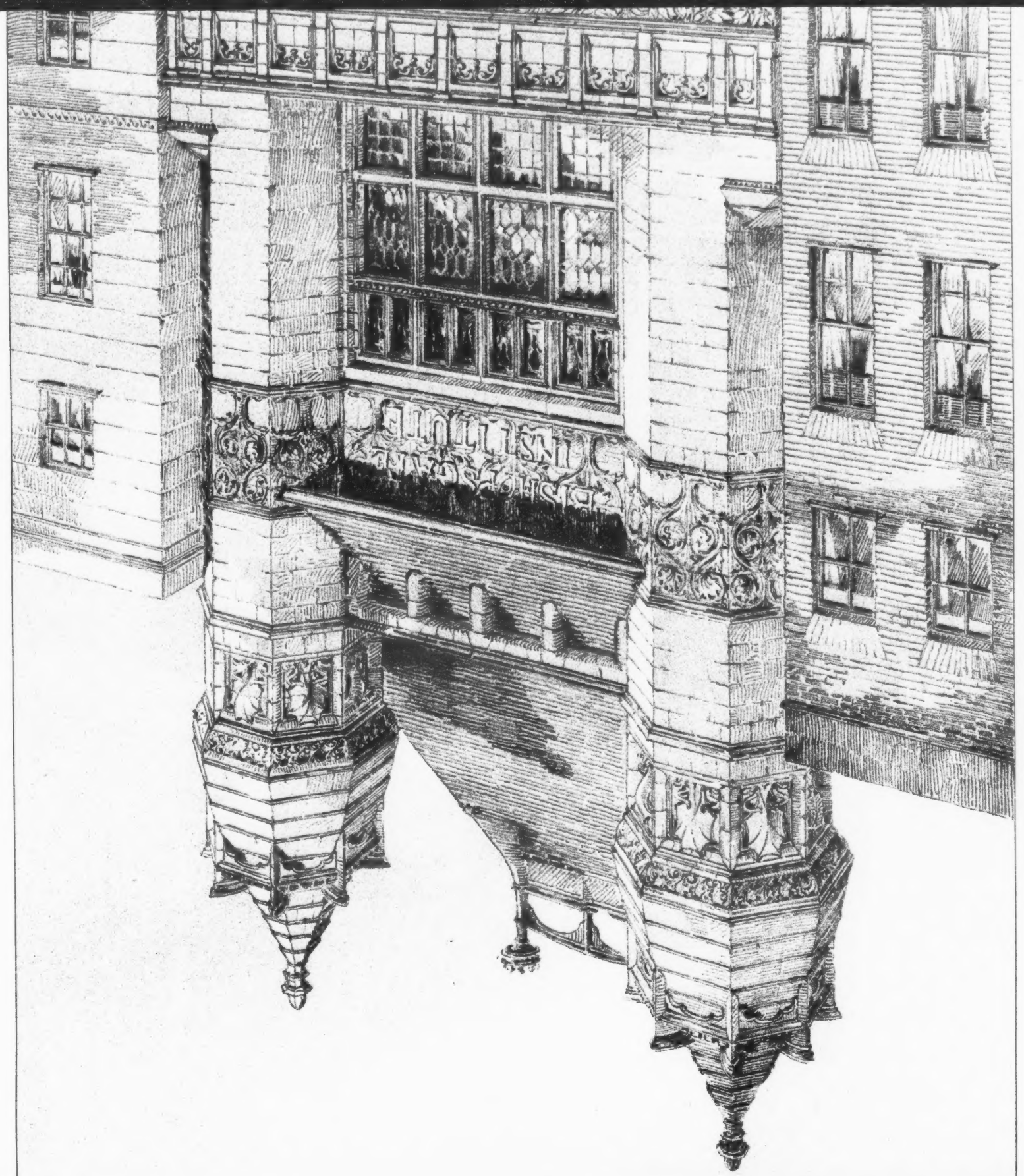

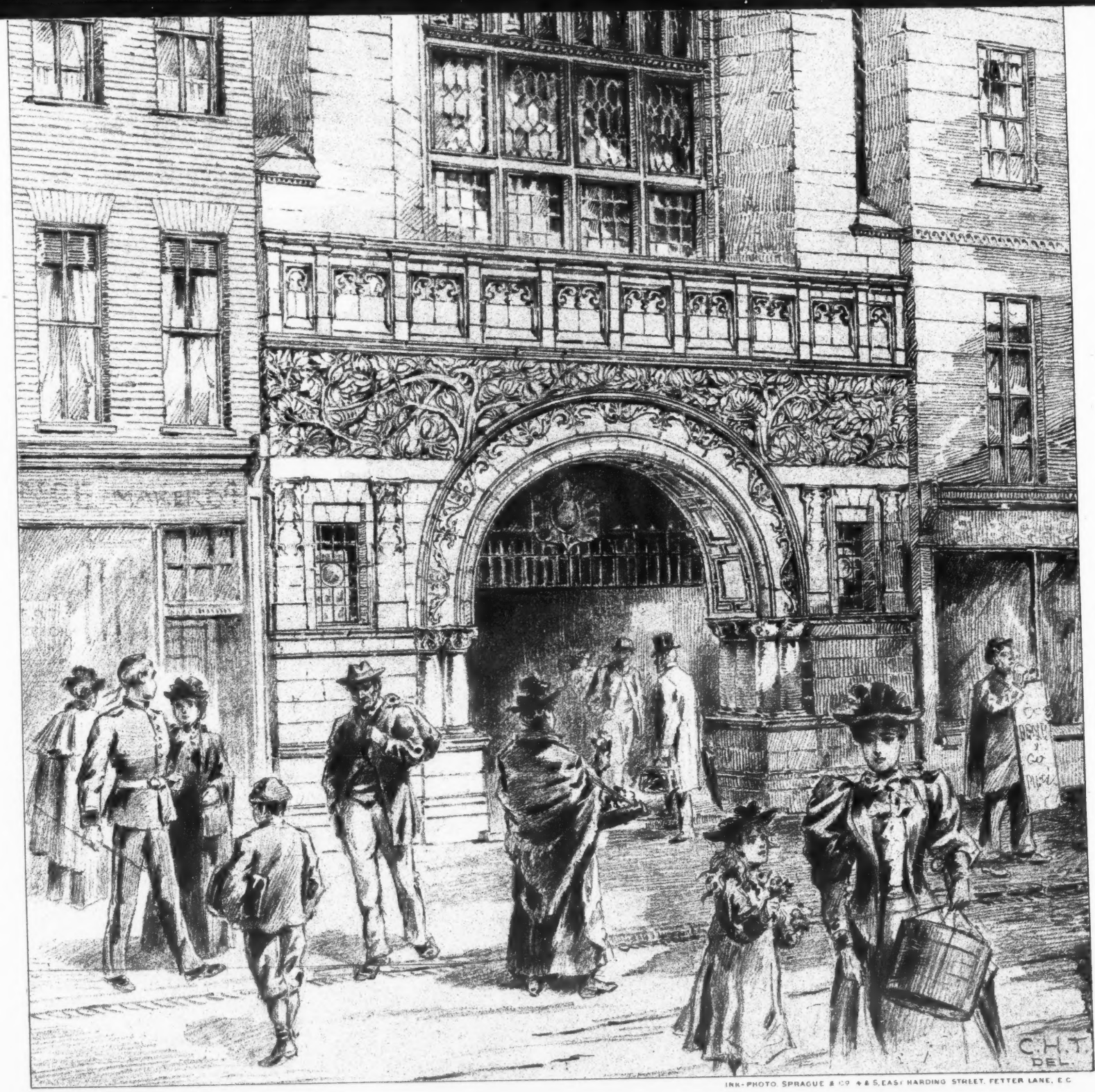

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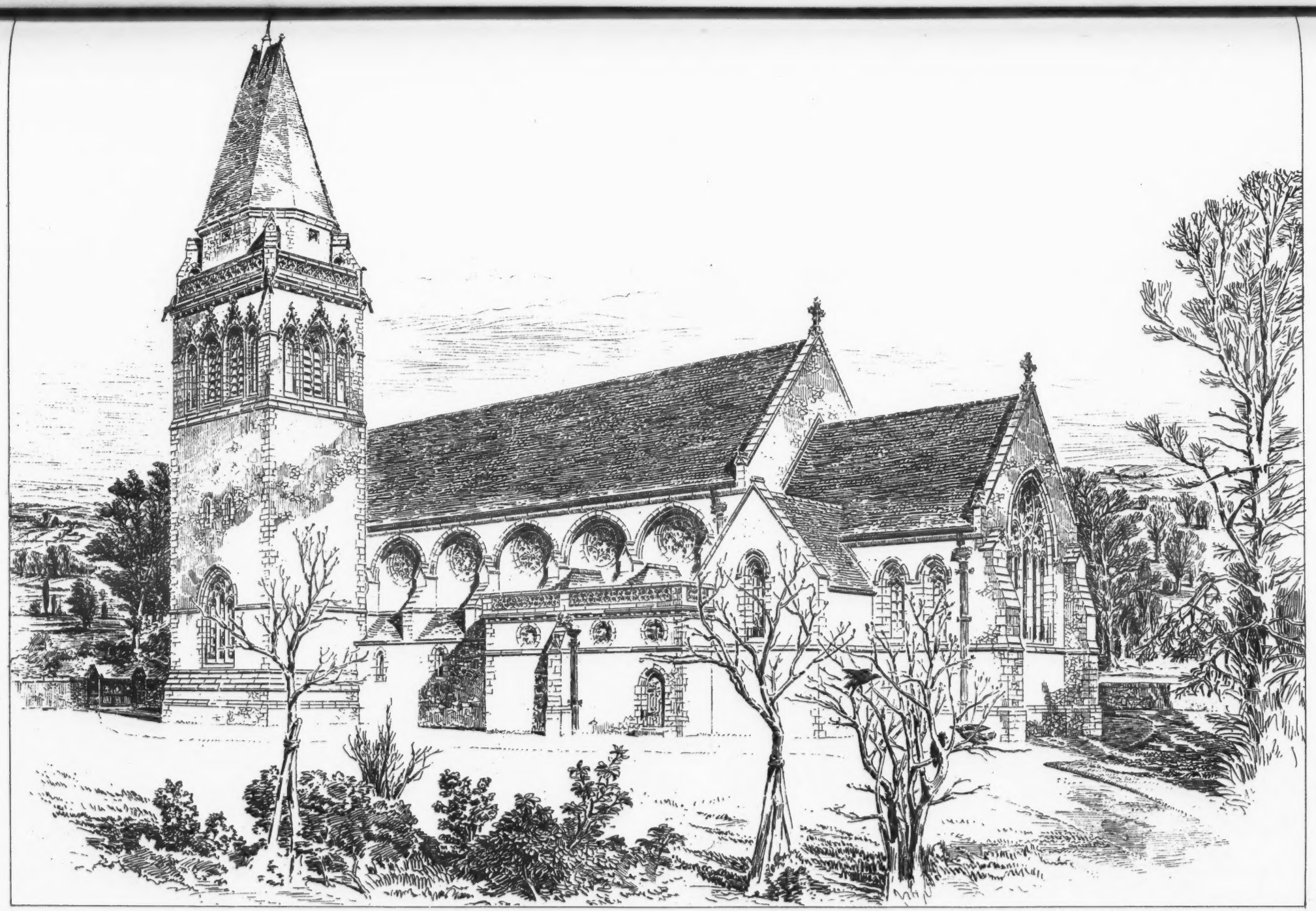

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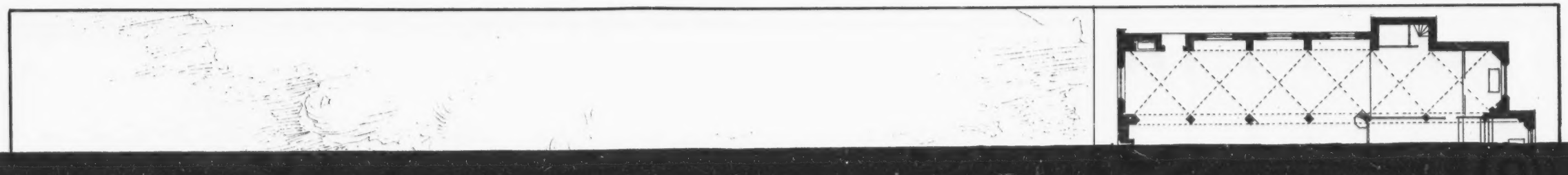

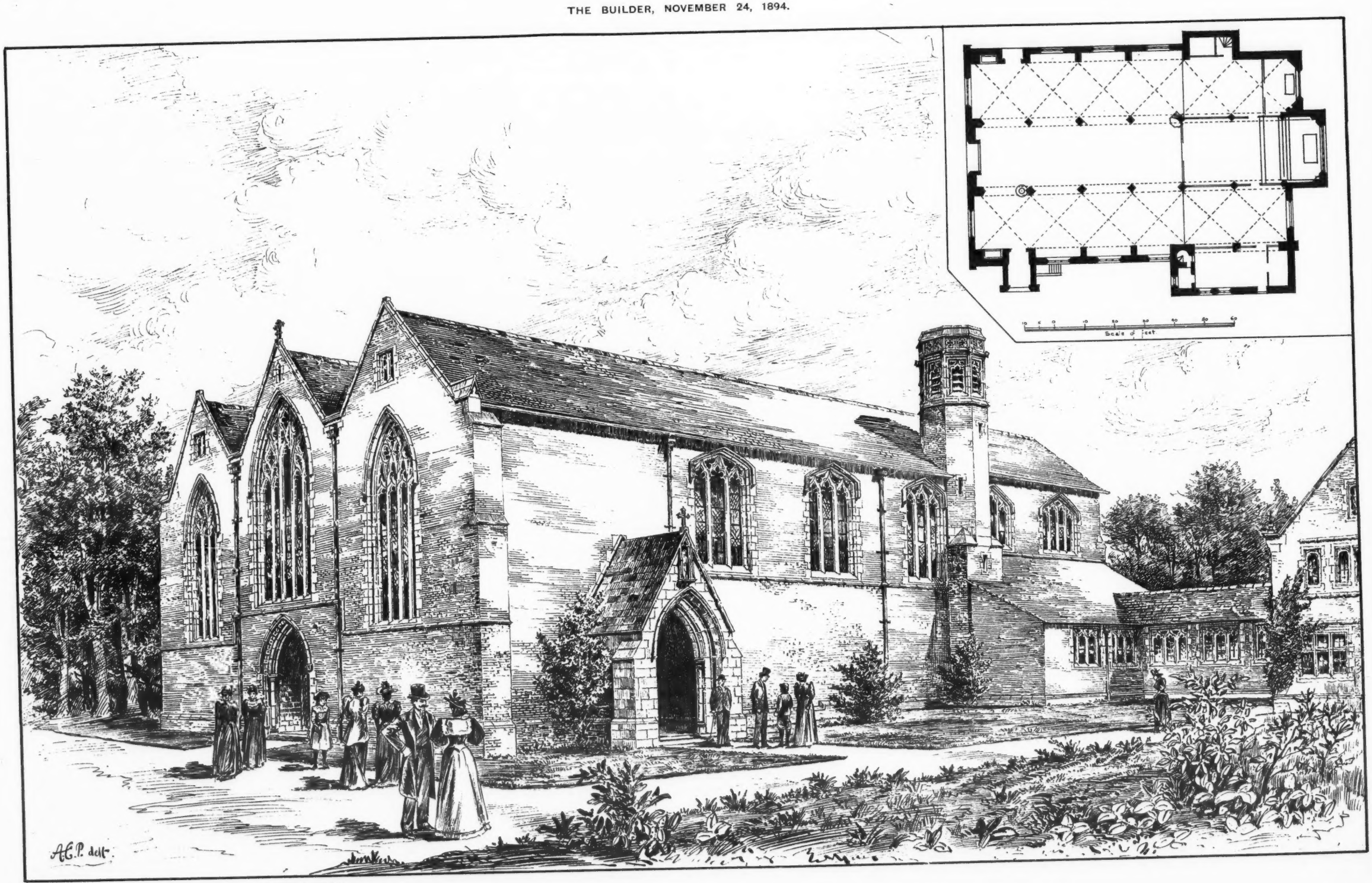

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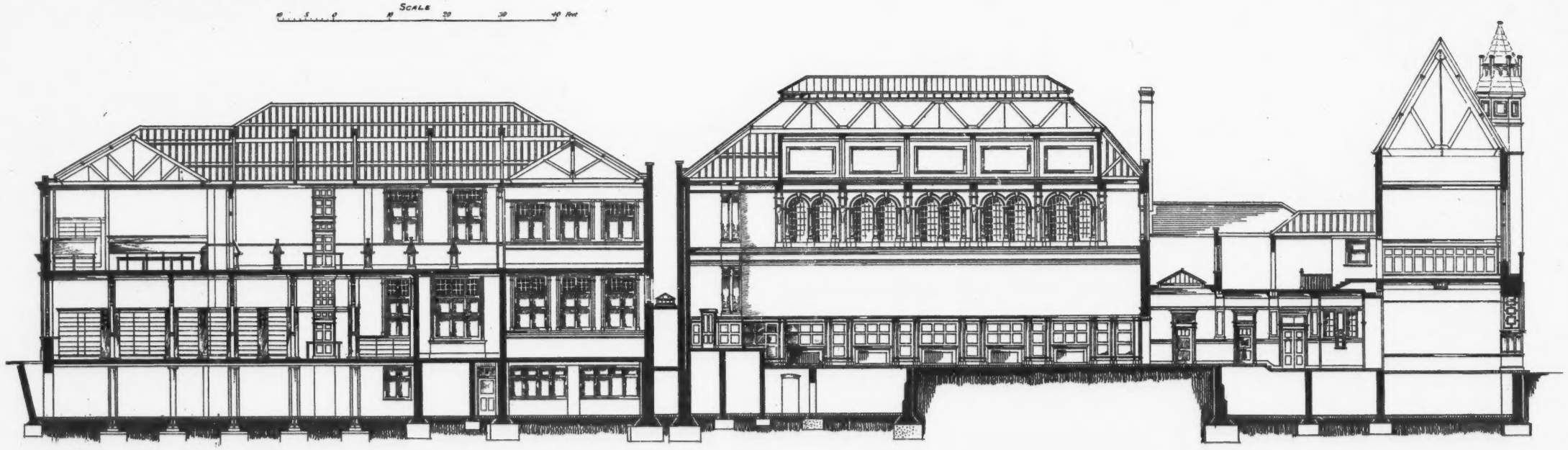
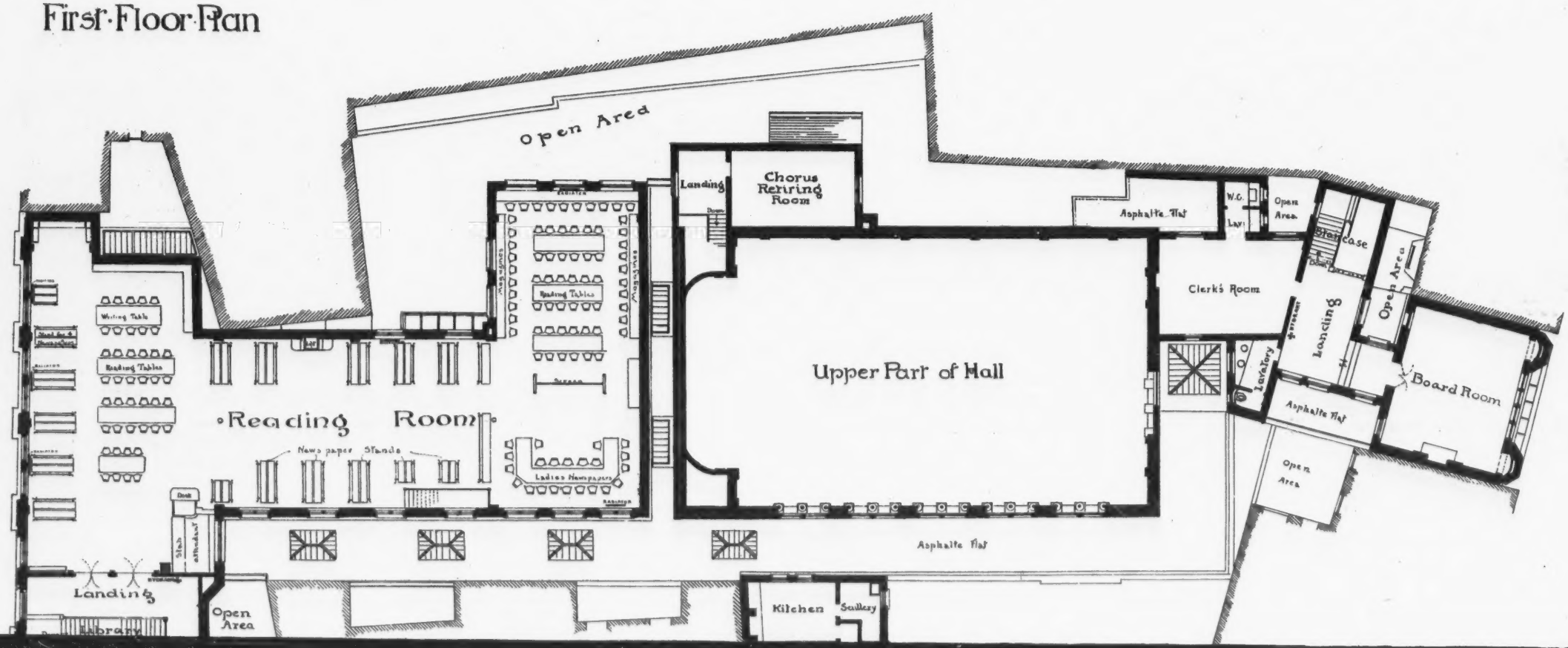
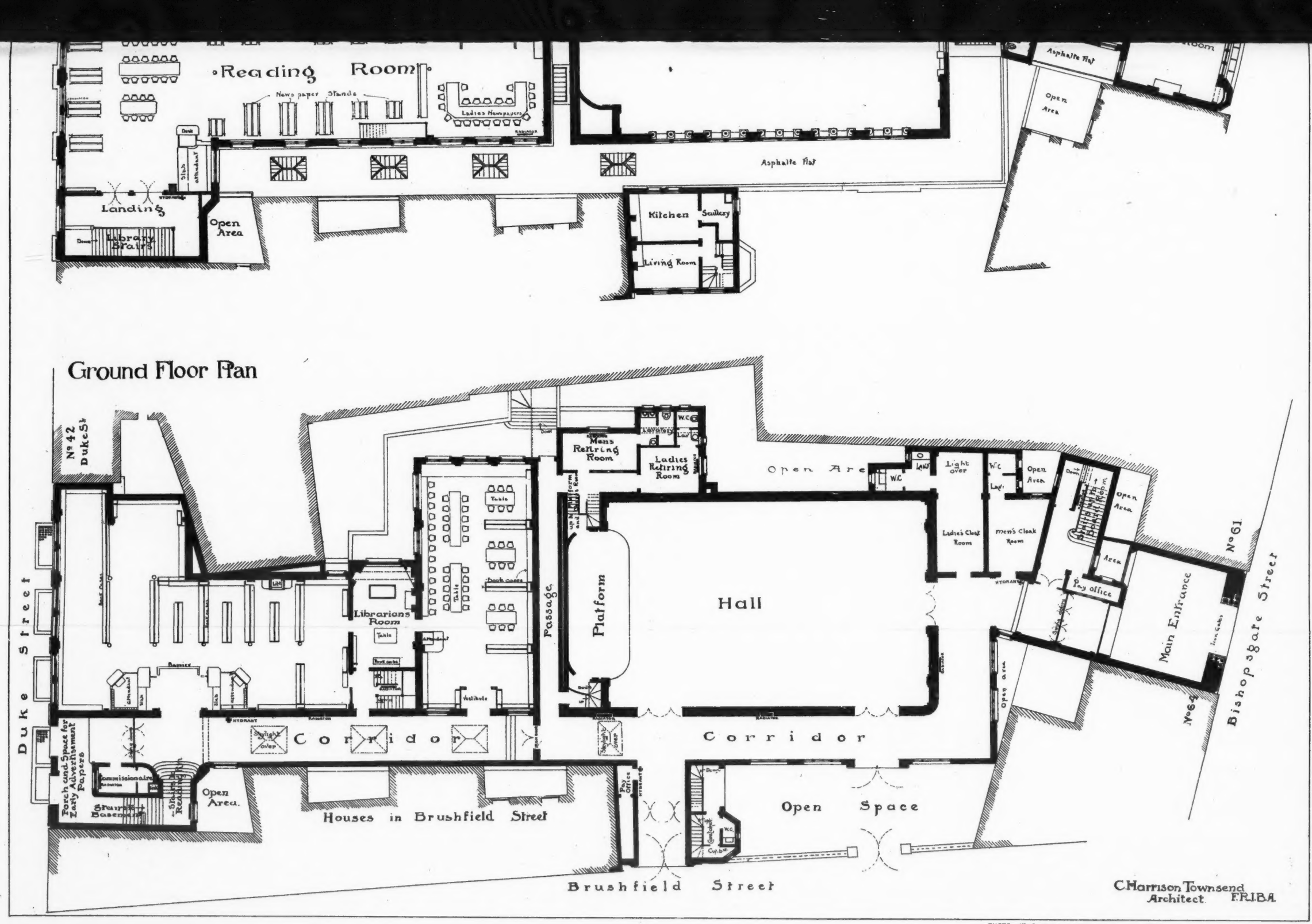


First Floor Plan



Ground Floor Plan



C. Harrison Townsend
Architect F.R.I.B.A.

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